

# Engagement and Effectiveness of Parent Management Training (Incredible Years) for Solo High-Risk Mothers: A Multiple Baseline Evaluation

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The effectiveness of *The Incredible Years* parent-training program with a small sample of four high risk solo mothers in a public clinic setting was assessed. All families had a number of risk factors for early drop-out and poor outcomes. Mindful of resource limitations in the public setting, economical strategies were used to enhance attendance rates and engagement. For the outcome evaluation, a multiple baseline across participants design was used. Participants attended a 2-hour group treatment session weekly for twenty weeks, with booster sessions at 2 months and 4 months following treatment. Participants had sons aged between 6 years and 9 years diagnosed with ADHD. Family functioning was assessed from a pretreatment interview schedule, measures of child behaviour and parent and family functioning. Participants also completed program satisfaction and program evaluation measures. Results showed: (a) all mothers engaged with and finished the program, (b) improvement in family functioning, (c) improvements in some teacher and parent reports of child behaviour, (d) increased parenting confidence, (e) reduced stress and depression levels for most parent participants, and (f) reports of better parent-child relationships. Additionally, participants all reported being highly satisfied with the program. Findings overall support the use of easy to do engagement strategies and the use of the *Incredible Years* parent-training program as an effective, low cost and early step intervention for families at higher risk in a day-to-day practice setting. The use of this intervention in an overall stepped care approach is considered and discussed.

■ *Keywords:* parent training, incredible years, engagement, solo mothers

Attention-deficit/hyperactivity disorder (ADHD) is a commonly diagnosed behavioural disorder of childhood that is characterised by symptoms of inattention, hyperactivity, and impulsivity. There has been a dramatic increase in diagnoses of ADHD in recent years (Barkley, 1999). Currently, it is the most common diagnosis given to children in child and adolescent mental health services in New Zealand (Ministry of Health, 2001). Prevalence rates for ADHD in New Zealand are around 5% of school-aged children with rates for boys three times higher than for girls

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(Ministry of Health, 2001). Similar prevalence rates are found in the United States, the United Kingdom, and other places internationally (Barkley, 1999).

Children with ADHD often have pronounced difficulties and impairments across multiple settings such as in the home, at school, and with their peers. They can also experience long-term adverse effects on academic, vocational, psychosocial, and psychiatric outcomes (Barkley, 1998; Jensen et al., 2005). Children with ADHD use mental health services more frequently than the general population, and the cost of caring for these children in primary paediatric settings is estimated to be at least twice that of the general population (Jensen et al., 2005; Power, Russell, Soffer, Blom-Hoffman & Grim, 2002). The impact of difficult child behaviour on family functioning has a compounding effect on the physical, emotional, and psychological welfare of the child, the family unit, and the wider community. Additionally, untreated behaviour problems increase the risk of negative outcomes in adulthood (Breen & Barkley, 1998; Reyno & McGrath, 2006).

Indeed, apart from the impact on the child, recent research has confirmed earlier findings that parents of children with ADHD experience elevated stress levels, and have fewer effective parenting practices compared to parents of children without this disorder (Treacy, Tripp, & Barid, 2005). To address parenting issues and these other factors, an effective, low cost intervention strategy would obviously be a useful addition to the range of services available in everyday settings.

## **Combined Pharmacological and Psychosocial Treatment**

According to authorities, including the National Institute of Mental Health web site, stimulant medication is reported to be the single most effective treatment in the short term for ADHD (Barkley, 1999; <http://www.nimh.nih.gov>), but reliance on pharmacological therapy alone may not be sufficient, given that the disorder is complex and stimulant medication may have limited long-term efficacy. Combined pharmacological and psychosocial treatments have the potential to target not only the core symptoms of ADHD but the associated social, academic, and family factors as well (Cunningham, 1999; Pelham, Wheeler, & Chronis, 1998).

Additionally, Jensen and colleagues (2005) found that the cost effectiveness of treating ADHD varies depending on the child's comorbidity status. Their research suggested that it is most cost effective to target combined medical management and behavioural treatment for children with complicated ADHD, particularly those with both internalising (e.g., anxiety and depression) and externalising (e.g., conduct disorder and oppositional defiant disorder) comorbid disorders.

## **Parenting Factors**

Parenting is a difficult and challenging task, made more so in the case of solo parenting (Cairney, Boyle, Offord, & Racine, 2003; Herbert, 1995; Mash & Johnston, 1990). Raising a child with ADHD often puts added stress on the family system (Treacy et al., 2005). Pertinent to this study, mothers of children with ADHD are generally more depressed, socially isolated, and restricted in the parenting role compared to mothers of children without ADHD (Mash & Johnston, 1990). For example, parents experiencing high levels of stress in their parenting role are more likely to make negative appraisals of their child's behaviour, become overly directive in their parenting style, and view themselves as less skilled and less knowledgeable

about parenting practices (Mash & Johnston, 1990; see also Treacy et al., 2005). A recent study found that maternal depression longitudinally predicted onset of conduct problems in ADHD children whereas positive parenting practices predicted a reduced level of conduct-related disturbance (Chronis et al. 2007).

### **Parent Training in a Clinical Care Context: Risk for Drop-out and Poor Outcomes**

Parent training is a model that has been extensively researched in terms of its efficacy (Kazdin, 1997; Mash & Johnston, 1990; Reyno & McGrath, 2006; Treacy et al., 2005). There have been many studies that successfully used a parent-training model, mainly for mild to moderately disruptive behaviours in earlier childhood (Reyno & McGrath, 2006). While there are numerous parent-training programs available, few have been as well researched and empirically supported as the Webster-Stratton's Incredible Years program. The Incredible Years parent-training program is designed to help parents avoid the development of serious child behaviour problems before they result in peer rejection, well established negative reputations, school problems, and academic failure (Webster-Stratton & Handcock, 1998). This program has been shown to be effective in a number of countries including the United States, Wales, the Netherlands, Canada, and Britain in the treatment of noncompliant and younger children at risk for conduct disorder as well as those with ADHD (Jones, Daley, Hutchings, Bywater, & Eames, 2007; Scott, Doolan, Spender, Jacobs, & Aspland, 2001; Webster-Stratton, 1994). Owing to its format, it is also designed to be cost effective. However, as risk factors accumulate in a family with a disruptive child, treatment strategies often need to take account of an increased potential for both early drop-out and attenuated outcomes (Ronan & Curtis, in press). A major problem in child and family mental health settings is early drop-out (Nock & Kazdin, 2005), including in parent-training programs generally (e.g., Prinz & Miller, 1994) and Webster-Stratton's more specifically (e.g., Webster-Stratton & Hammond, 1990). Consequently, to capitalise on an evidence-based model of practice in a day-to-day setting, a major prerequisite is ensuring attendance and participation. Reyno and McGrath (2006; see also Lundahl, Rissu, & Lovejoy, 2006) identified risk factors both for early drop out and reduced treatment effectiveness in parenting programs. Families in the current study all had a number of these risk factors present (e.g., solo parenting, low socioeconomic status [SES], low level of education, negative life events/stresses, maternal depression, more severe child disruption).

Additionally, while the Incredible Years has some established efficacy, it has not been trialled specifically in a public clinic setting for ADHD children and solo parents. Given the increasing call for evidence-based practice in clinical care settings (Weisz, Jensen-Doss, & Hawley, 2006), and the fact that this study was carried out in a public mental health service, this study was designed as a pilot to a larger effort to assess treatment effectiveness. The present study had two main aims. The first was to engage participants and help them remain motivated to attend, participate, and finish the program, in light of the evidence indicating risk of drop-out in parent-training programs (Reyno & McGrath, 2006). The second and overall aim was to assess the impact the Incredible Years parent-training program had on the functioning of these parents, their child with ADHD, and their families.

## Method

### Design

A single participant design was chosen because it allows for the assessment of change in each participant's behaviour over time by repeated measure of dependent variables over the course of the treatment program: 'For parents, teacher, therapist, and others charged with changing behaviour, change makes itself known only through multiple measures taken over prolonged observational periods' (Morgan & Morgan, 2001, p. 122). Participants serve as their own controls and this is viewed as the most relevant comparison because behaviour change is measured against his or her own baseline (Morgan & Morgan, 2001). In this way, single case designs are compatible with clinic care setting needs and a 'local science' model of service delivery (e.g., Blampied, 1999, 2000; Stricker & Trierwiler, 2006).

Additionally, a multiple baseline across participants design was used to assess further the controlling effects of intervention (Barlow & Hersen, 1984). Multiple baseline designs are designed to be user-friendly in practice contexts (Hayes, 1981; see also Feather & Ronan, 2006). They are able to demonstrate experimentally that the effects of treatment are likely not a function of other influences, including a number of threats to internal validity (Blampied, 1999). Successive replications demonstrate support for the intervention being responsible for any changes observed (Kazdin, 2003).

Participants had varied baseline periods prior to commencement of treatment that ranged from 4 days to 24 days. A nonconcurrent procedure was used as these were varying baselines and the intervention started at the same time for all participants (Watson & Workman, 1981). This procedural strategy is compatible with an effectiveness-based research agenda (Hayes, 1981; see also Feather & Ronan, 2006), and it reduces the requirement that participants begin assessment concurrently. This makes it possible to include data from clients assessed at different times.

Pretreatment assessment included the battery of measures described in a subsequent section. It also included a pretreatment interview to explain the research project and obtain consent, establish goals for treatment, and identify any barriers to attending the program. Daily and weekly baseline measures (described below) provided information on family and child functioning prior to intervention. Child behaviours were collected daily during baseline, across the twenty week treatment period, and again for a 2-week period at 4-month follow-up. Family functioning scores were collected weekly beginning at baseline and continuing during treatment, and again at 4-month follow-up. All child behaviour and parent functioning measures were collected again at posttreatment and at 4-month follow-up. Trends in the continuous data were identified to assess the impact of treatment over time. Other data collected at pretreatment, posttreatment, and follow-up were used to help identify the overall magnitude and rate of change. At posttreatment, evaluations also included additional satisfaction and program evaluation measures.

Recent meta-analyses of parent-training programs identified a number of factors that mitigate outcomes and predict drop-out (Lundahl et al., 2006; Reyno & McGrath, 2006). Each family in the current study had multiple risk factors for drop-out and poor outcomes (e.g., solo parenting, low SES, maternal depression, severe child behaviour).

Thus, in addition to an assessment of the effectiveness of parent-training for high risk families, a first aim of the current study was to assess whether mothers

would engage with, attend regularly, complete, and be satisfied with the program. To assist with motivation, but mindful of keeping costs low, a variety of strategies were used to increase engagement as well as assist with improving outcomes (Ronan & Curtis, in press). These were:

- assessing for obstacles to attendance (Kazdin, 1997; Nock & Kazdin, 2005)
- weekly phone check-in, and ongoing assessment of progress (Dishion & Kavanagh, 2003)
- a planned home visit (known to improve attendance) (Dishion & Kavanagh, 2003)
- weekly goal setting and evaluation of previous week's homework and goals
- planned booster sessions.

### Participants

Participants were four parents whose children met the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM IV; APA, 1994) criteria for attention deficit hyperactivity disorder (ADHD). They were referred through the Child and Adolescent Mental Health Specialist Service (CAMHSS) of a public hospital setting. Participants were part of a group of nine parents who attended the training program. All four participants were of European descent, had no tertiary training, and were all solo mothers. At an intake interview, they all reported they had experienced depression, had abused drugs and alcohol in the past, and three of the four participants identified psychiatric history in their wider family. They also reported lack of employment ( $n = 4$ ) and a lack of family and social support ( $n = 4$ ). However, one participant did report a friend encouraged her to participate in the current program. Participants reported no difficulties during their pregnancy and stated that their children's developmental milestones were normal. It is also of note that during the time of the study, all families experienced a significant transition. They either moved ( $n = 3$ ) and/or changed schools ( $n = 3$ ).

### Children

Children were male between 6 years and 9 years of age (6, 8, 8, 9 years) and all met the DSM IV criteria for ADHD (see next section). The children were all on stimulant medication monitored by a psychiatrist and a case manager. All children were reported by their mothers at intake to have major behavioural difficulties in the home and school environment, including maintaining friendships. Additionally, they all experienced some mild learning difficulties and teachers reported they were behind in reading and writing skills for their age.

### Assessment

ADHD diagnosis was established by a child psychiatrist according to the criteria set out in the DSM IV (APA, 1994), and was supported by intake interview information and observation, along with parent and teacher comments and rating profiles on Conners' Rating scales.

### Child Behaviour Measures

Child behaviour was assessed from parent and teacher rating scores on well validated established measures: Conners' Parent and Teacher Rating scales (Conners,

1997) and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). These were collected at baseline, posttreatment, and follow-up. In addition, parents collected daily records of child behaviour for varying baseline periods prior to the commencement of the training program, throughout the 20-week treatment period and for a 2-week period at 4-month follow-up.

### **Daily Behaviour Record**

A checklist of ten child behaviours was established for this research. It included both positive behaviours (completes tasks on time, complies with requests, plays nicely with siblings, respects feelings for others, waits his turn to speak) and negative behaviours reflecting aspects of hyperactivity, impulsivity and attention deficit (interrupting demanding attention; argues and talks back to adults; hitting, kicking, biting; being hyperactive and running around; yelling and temper tantrums). The checklist was used to record frequency of behaviours daily using a Likert scale of 1 (not at all) to 7 (a lot). Participants began daily recordings from the beginning of baseline and continued through the 20-week training program and again for 2 weeks at 4-month follow-up. Baseline daily scores are reflected in the figures seen in the results while treatment and follow up daily scores were averaged across the week to assess change over those periods.<sup>1</sup>

### **Weekly Family Functioning Measures**

Parents identified three target difficulties in family functioning they wished to address, and rated each issue on a Likert scale of 1 (*least quality*) to 7 (*best quality*). These ratings were assessed weekly from baseline through course completion, and again at 4-month follow-up.

### **Parent Functioning Measures**

Parent functioning was assessed using established measures: the Beck Depression Inventory (BDI-II; Beck & Steer, 1987) and the Parental Stress Index (PSI; Abidin, 1983).

### **Group Goals**

In an initial session, the group of parents identified a set of goals related to family functioning (17 items in total) that they wished to achieve during the training program. Each participant scored the items on a 1–7 Likert scale at midtreatment (week 10), posttreatment (week 20), and at 4-month follow-up.

### **Parent Satisfaction and Program Evaluation**

At posttreatment, all participants completed a standardised satisfaction questionnaire and a program evaluation that evaluated a number of aspects of the course including content, facilitators' role, skills learned, and future expectancies (Webster-Stratton, 1999).

### **The Training Program**

Treatment involved parents attending a 20-week Parent Management Training Program. Sessions were 2 hours in duration and were held weekly except for a 2-week break for one school vacation. Planned booster sessions were carried out at 2 months posttreatment, and again at 4-month follow-up. Assessments that were noncontinuous

were carried out at pre- and posttraining and 4-month follow-up. Continuous evaluation was done across variable baseline intervals, across treatment, and across a 2-week interval at 4-month follow-up.

The training protocol used in this research was an integrated combination of the Basic School Aged Parent Training, Advanced Parent Training, and Supporting Your Child's Education Program. This combination was in accordance with an already established protocol developed by Webster-Stratton, combined in a logical sequence after training and consultation with C. Webster-Stratton (personal communication, June, 2001). All sessions were audio-taped and 25% were randomly selected and rated according to adherence to the prescribed protocols set out in the treatment manual. Rating was carried out by a senior clinical psychologist not involved with the intervention, but with several years experience in parent-training and manualised interventions. No protocol violations were found.

### Intervention and Ongoing Engagement

Each session included a review of the previous session, collaborative learning on the new topic, video-vignettes showing examples of parents and children interacting, group discussion, and opportunities to role-play and practice new strategies. Participants set weekly individual goals that were then evaluated the following week. A homework activity designed for mastery (e.g., setting up a reward chart) (Kazantzis, Deane, Ronan, & L'Abate, 2005) and to reinforce new techniques was provided, along with a fridge magnet summary of the main points to help remind parents of the new learning. Participants were also encouraged to read the relevant chapter from the accompanying parent book (Webster-Stratton, 1992). Each participant recorded daily measures of child behaviour and weekly measures of family functioning. Midweek phone calls from the therapist served to encourage parents, assess any difficulty they might have been experiencing, and to ensure the daily measures were being recorded. Assessing for obstacles to attendance at intake revealed that one participant required regular assistance with transport. Finally, all participants were home visited at least once during the initial phase of the treatment period.

### Results

All parents attended and finished the program. Results first document attendance and satisfaction followed by child, family, and parent outcomes. In terms of outcomes, those continuously evaluated either daily (child behaviour) or weekly (family functioning) are presented first followed by other outcome indicators measured at pretest, posttest, and follow-up.

#### Attendance and Parents' Satisfaction Questionnaire

There was a relatively high rate of attendance with all participants attending at least sixteen of the twenty sessions (range = 16–19). All parents completed the program. The Parent Satisfaction Questionnaire completed at the conclusion of the training program rated items on a 1–7 Likert scale (1 = *least satisfied*, 7 = *most satisfied*).

As seen in Table 1, all items related to levels of satisfaction with the program were rated at 4 and above indicating a general level of satisfaction. Items relating to parenting confidence were all rated above 5 indicating above average levels of confidence in managing challenging behaviour. All participants scored a high level of satisfaction with the course with regard to recommending the program to a friend

**TABLE 1**

Participants' Response on Parent Satisfaction Questionnaire: Level of Satisfaction With the Overall Program

Item <sup>a</sup>	Participant			
	A	B	C	D
1	5	6	7	6
2	6	6	6	6
3	4	6	4	4
4	6	6	6	6
5	7	6	6	7
6	7	6	6	6
7	7	6	6	6
8	7	7	7	7
9	5	7	5	5
10	6	6	6	5
11	7	7	6	7
Average item score	6	6	6	6

Note: Rating scale: 1 2 3 4 5 6 7  
*Least satisfied*  *Most satisfied*

<sup>a</sup>Items included for reader convenience.

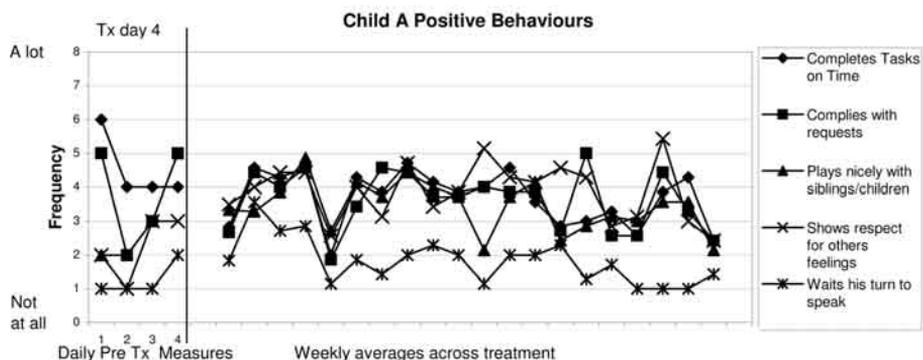
1. The major problem(s) that originally prompted me to begin treatment for my child is (are) at this point
2. My child's problems which I have treated with clinic methods are at this point
3. My child's problems which I have not treated with clinic methods are at this point
4. At this point my feelings about my child's progress are that I am
5. To what degree has the treatment program helped with other general personal or family problems not directly related to your child? (e.g., marriage, my feelings in general)
6. At this point my expectation for good results from this treatment is
7. I feel that the approach used to treat my child's behaviour problems in this program is
8. Would you recommend the program to a friend or relative?
9. How confident are you in managing current behaviour problems in the home on your own?
10. How confident are you in your ability to manage future behaviour problems in the home using what you learned from this program?
11. My overall feeling about the treatment program for my child and family

(all rated a 7) and overall feeling about the value of the treatment program for their child and family (one rated a 6; the others, 7). Finally, all parents attended all planned booster sessions.

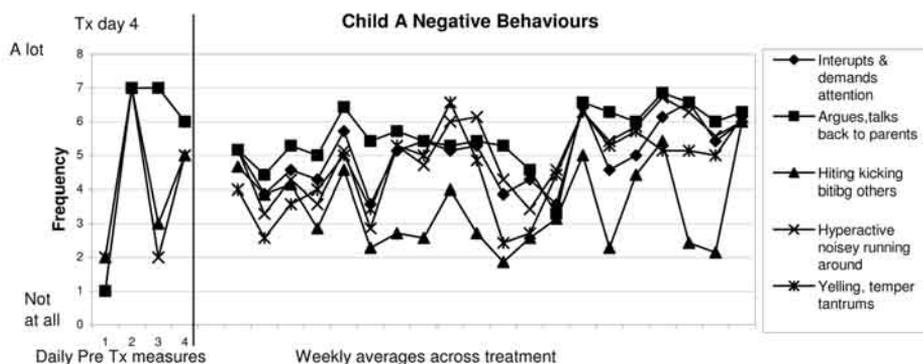
**Daily Behaviour Measure**

Parents monitored daily positive and negative child behaviours for varied baseline periods and throughout the treatment period for all participants. There was no fully consistent trend across baseline for all children. All children showed some fluctuations in positive behaviours during treatment and there was a general trend towards increased frequency of positive behaviours by posttreatment. Negative behaviours showed mixed results with improvements for child D and C but little change for child A and B across treatment. Generally, positive behaviours tended to improve early in the treatment period while negative behaviours seemed more resistant to initial treatment effects (see Figures 1–8).<sup>2</sup>

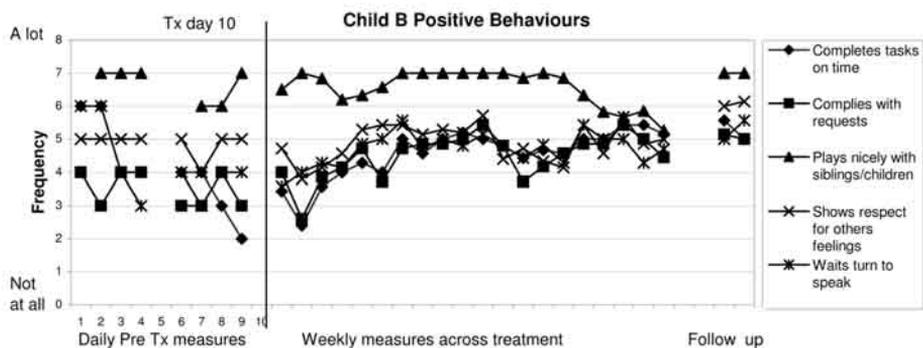
At 4-month follow-up, scores of daily child behaviour were collected over a 2-week period. During the 2-week period, child B and D showed continued improvement in



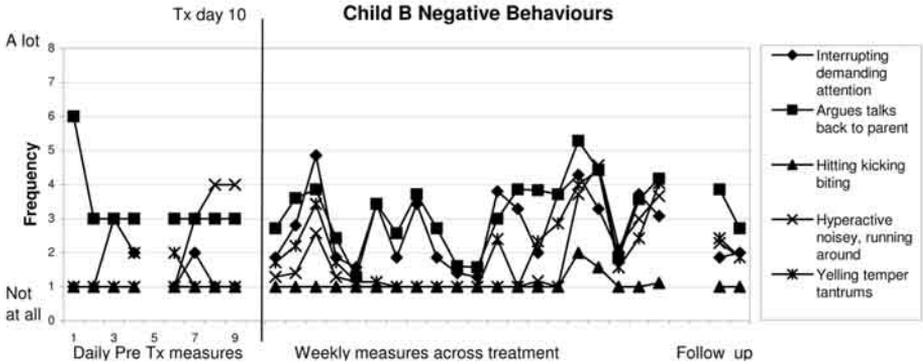
**FIGURE 1**  
Child A Positive Behaviours.



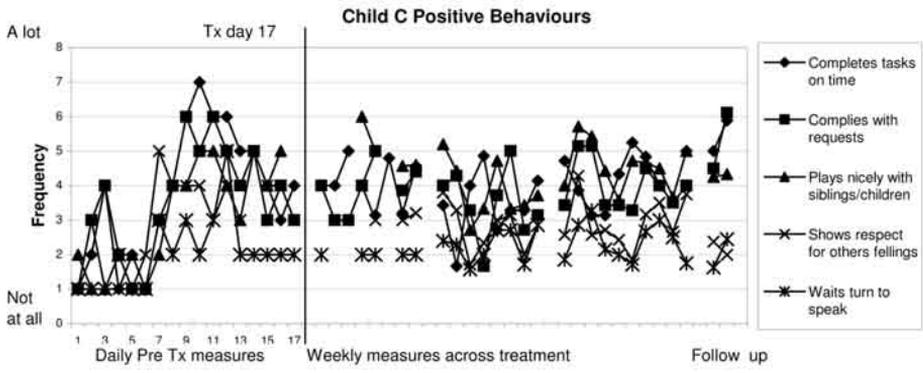
**FIGURE 2**  
Child A Negative Behaviours.



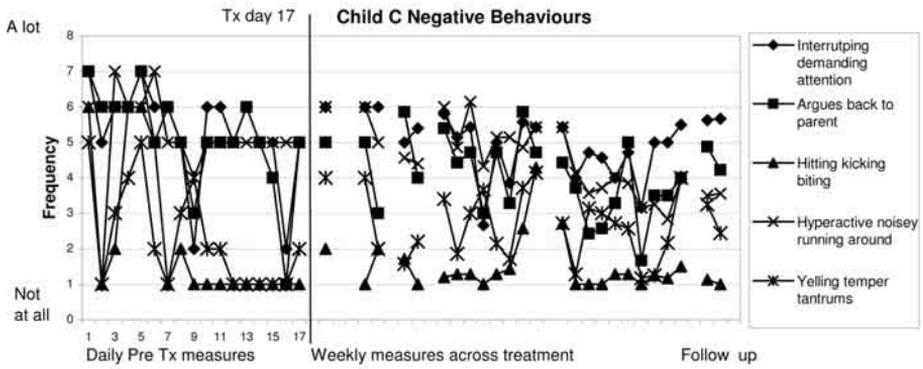
**FIGURE 3**  
Child B Positive Behaviours.



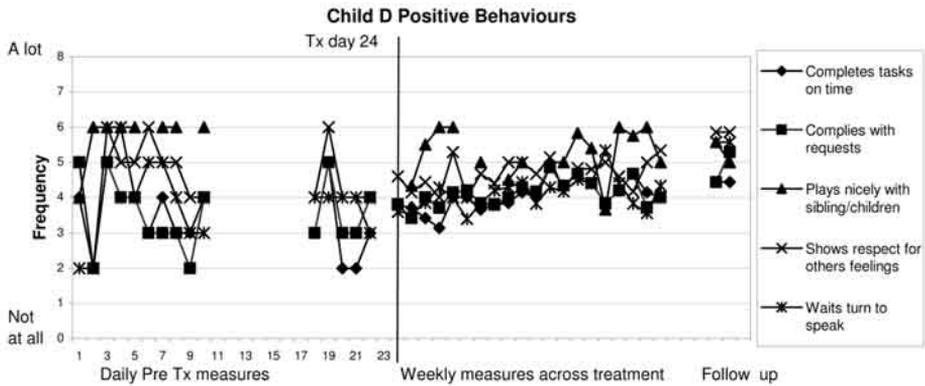
**FIGURE 4**  
Child B Negative Behaviours.



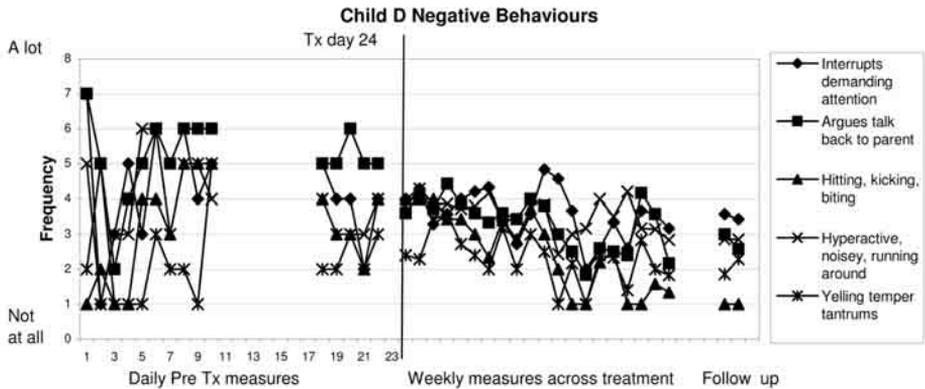
**FIGURE 5**  
Child C Positive Behaviours.



**FIGURE 6**  
Child C Negative Behaviours.



**FIGURE 7**  
Child A Positive Behaviours.



**FIGURE 8**  
Child A Negative Behaviours.

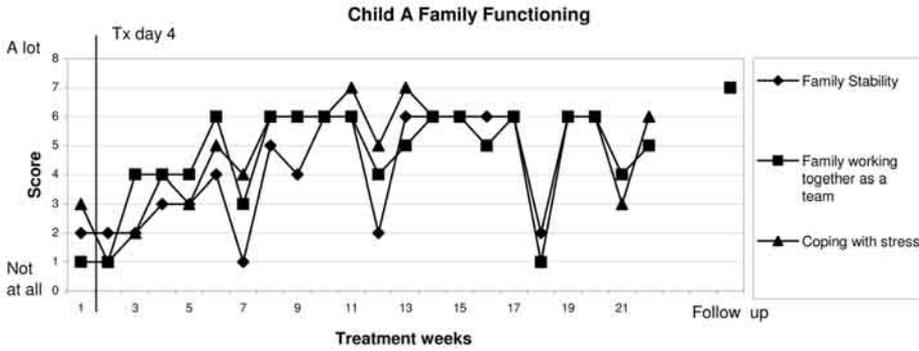
the daily behaviour measures, child C showed fluctuations in behaviour and data were not able to be collected for child A. Child A was in the care of his father at follow-up (who agreed to fill out the Conners measure but no other indices, including daily measures). However, of note, the mother was still engaged with the service and participated in planned booster sessions.

**Weekly Family Functioning**

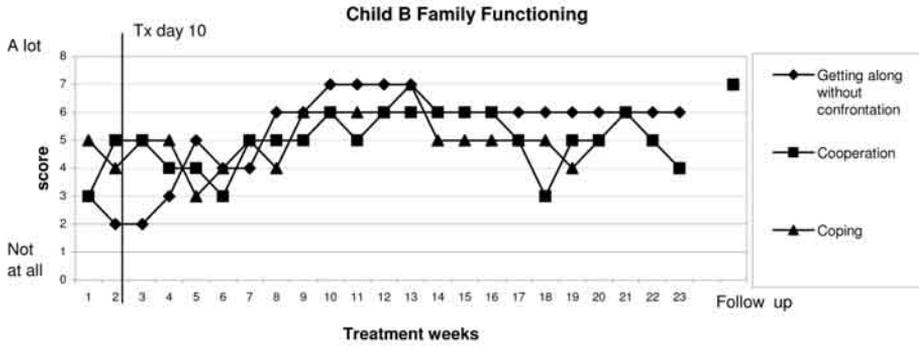
Figures 9, 10, 11 and 12 show the changes in family functioning over the treatment period and at follow-up for each family. Each participant identified three areas of family functioning to target for improvement during the training. Overall, treatment impact was seen across treatment and follow-up intervals.

For participants A and B, all three functions increased steadily during treatment, and at follow-up, all items were at the maximum best score. For Participant C, one function, ('yelling') was unstable and showed no overall improvement. The other

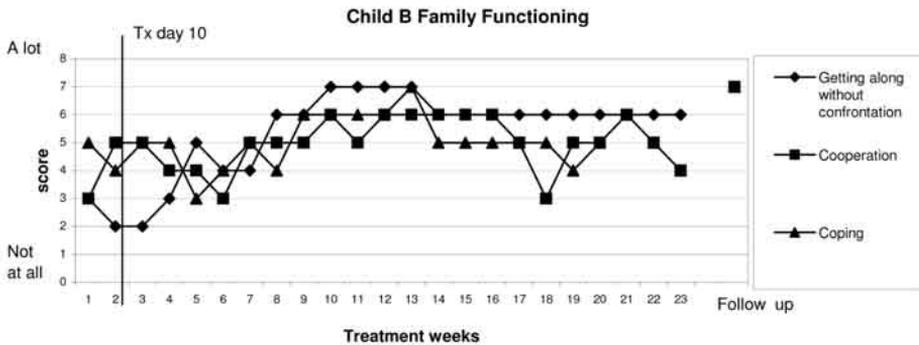
**Behaviour Change**



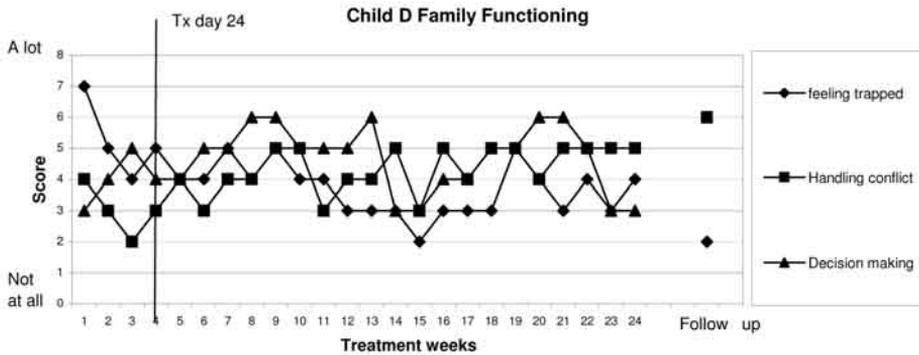
**FIGURE 9**  
Child A Family Functioning.



**FIGURE 10**  
Child B Family Functioning.



**FIGURE 11**  
Child C Family Functioning.



**FIGURE 12**  
Child D Family Functioning.

two functions had an overall improvement at posttreatment and continued to improve across follow-up. For participant D, all three measures fluctuated during the treatment period with a general trend towards improved family functioning. By follow-up, all functions had improved.

**Child Behaviour Measures**  
*Strengths and Difficulties Questionnaire*

Parent scores on the Strengths and Difficulties Questionnaire for Total Difficulties did not reflect any major trends across pre and posttreatment across participants. However, by follow-up, there was an overall improvement in impact scores for all participants, and two of these (B and D) had scores in the normal range.

**TABLE 2**  
Parent Scores on Strengths and Difficulties Questionnaire

Scores	Participant	Pretreatment	Posttreatment	Follow-up
Difficulties	A	36	37	29
Strengths		7	7	7
Impact		7	10	5
Difficulties	B	19	27	15
Strengths		7	8	10
Impact		2	8	0
Difficulties	C	23	24	29
Strengths		4	5	6
Impact		6	5	5
Difficulties	D	16	13	16
Strengths		8	9	6
Impact		2	2	0

Note: Total Difficulties score: 17–40, abnormal; 14–16, borderline; 0–13 normal.  
 Prosocial score 0–10. Impact score 0–10: ≥ 2, abnormal; 1, borderline; 0, normal.  
 SDQ = Strengths and Difficulties Questionnaire; Total Strengths = Prosocial Behaviour score;  
 Total Difficulties = Hyperactivity score + Emotional Symptom scale + Conduct Problem scale + Peer Problem score.

**TABLE 3**  
Conners' Parent and Teacher Rating Scale

Measure	Participant	Pretreatment		Posttreatment		Follow-up	
		Parent	Teacher	Parent	Teacher	Parent	Teacher
Conners							
Total <i>T</i>	A	87	61	83	61	81(50) <sup>1</sup>	62
Total <i>T</i>	B	70	77	82	69	66	71
Total <i>T</i>	C	87	74	84	46	85	61
Total <i>T</i>	D	72	66	61	60	64	56

Note: Conners' Total *T* clinically significant at  $T \geq 67$ ; <sup>1</sup> = father's scores for child D.

**Conners' Parent and Teacher Questionnaires**

Conners' Parent *T* scores for two participants (B and D) showed an overall improvement in behaviour between pretreatment and follow-up. For the two other participants (A and C), the improvement was very slight. Teacher *T* scores indicated the greatest improvement was across treatment for each child except child A (no improvement). Parent scores overall tended to reflect more problems than teacher scores (except child B), and teachers reported more overall improvement than parents.

**Parent Functioning Measures**

*Parenting Stress Index (PSI)*

Parent stress levels were expected to decline following treatment. Two participants (A and C) showed a decline in PSI scores across treatment, and there was overall improvement in stress levels at follow-up for three participants (A, B and D). Participant C continued to have high PSI scores throughout the treatment and remained in the clinically significant range at follow-up.

*Beck Depression Inventory (BDI)*

It was expected that depression levels would improve with treatment and this was evident for participants A, B and D (see Table 4). Participant C's level of depression increased across treatment and at follow-up was in the severe depression range. Thus, in this case, while improvements were seen on family functioning and child behaviour indices, indicators of maternal depression at this final gate necessitated referral to a next step, and more intensive, intervention.

**Treatment Group Goals**

The group identified 17 goals and rated their achievement for each item on a 1–7 Likert scale (1 = *worst*, 7 = *best*). As seen in Table 4, most goals by midtreatment were not yet mastered. All participants rated some improvement on all goals by the end of treatment period. By follow-up, all participants reported achieving 10 or more goals.

**Discussion**

The results of this study provide evidence to support the Incredible Years parent training as having a number of beneficial effects on the functioning of families of

**TABLE 4**

Parent Functioning Scores on PSI and BDI

Measure	Participant	Pretreatment		Posttreatment		Follow-up	
		Score	Percentile	Score	Percentile	Score	Percentile
PSI	A	166	99	139	99	92	90
	B	82	80	98	90	53	10
	C	95	90	94	90	147	99
	D	110	99	121	99	72	55
BDI		Score		Score		Score	
	A	2		7		0	
	B	11		14		7	
	C	14		20		36	
D	21		1		9		

Note: PSI = Parental Stress Index; Total Stress 15th–80th percentile = normal range;  $\geq 90$ th percentile = clinically significant levels of stress. DBI-II = Beck Depression Inventory; BDI < 10 = none or minimal depression; 11–18 = mild to moderate depression; 19–29 = moderate to severe depression; 30–63 = severe depression.

solo mothers with children diagnosed with ADHD. The improvement in (a) targeted family functioning problems, (b) teacher reports of child behaviours, (c) number of goals achieved related to child behaviours, and (d) the improvement in stress and depression scores for most participants provides support for the effectiveness of this program as carried out in a public health setting. Additionally, all participants reported (a) improvement in parent–child relationships, and (b) increased confidence in parenting ability. Findings also demonstrated that these mothers all engaged with the program in the sense that they attended most sessions, they all completed training and booster sessions, and they all reported high levels of satisfaction with the program. Thus, despite the absence of universal change on all indicators, overall findings support the inclusion of low cost parent training for solo mothers in a public mental health setting as part of an overall continuum of universal through targeted and intensive services. We first consider treatment findings and then focus on motivation and engagement.

Family functioning showed improvement across treatment. In particular, targeted areas of family functioning, explicit treatment goals, and general levels of maternal stress and depression improved in most cases. This is consistent with other studies showing that parent functioning can be improved with parent training

**TABLE 5**

Participant Scores on Group Goals

Participant	Midtreatment	Posttreatment	Follow-up
	Number of items scored > 5		
A	7	8	16
B	13	14	17
C	9	13	10
D	1	5	13

Note: There were 17 goals in total.

**Behaviour Change**

(Kazdin, 1997; Renyo & McGrath, 2006; Treacey et al., 2005). Even in the case of Family A, where consistent improvement in parent reports of child behaviour was not seen, all three targeted family functioning goals markedly improved. A number of factors could account for some equivocal parent report findings. For example, families were all selected from the wait list of referrals to this clinic that, based on referral criteria, puts them in the top 3% of families in terms of dysfunction and the single case study design magnifies individual cases. In addition, parental psychopathology has been found to increase negative ratings of child behaviour (Breen & Barkley, 1988; Marsh & Johnston, 1990; Treacy et al., 2005). The fact that Parent C reported increased levels of stress and depression may have influenced her ratings on various indicators. An alternative explanation to the pattern of parent reports is that children may not have improved where indicated. Nevertheless, the strength of this explanation is attenuated by the fact that daily and weekly reports tended to reflect improvements, at least for some behaviours. In this context, a further explanation is that daily or weekly ratings, including those that reflect positive features, might be less prone to bias and worth considering for use in practice settings in that light.

Teacher ratings provided some evidence supportive of parent-training effectiveness in three of four cases. While parents reported feeling better about their parenting skills and more positive about specific features of their child's daily problems and family factors, their perceptions of overall child behaviour as reflected on the Conner's rating scales was not as positive overall as teachers, including prior to parent training. Parents often lack the opportunity to compare their child's behaviour with a number of other age related peers, whereas teachers have ready comparisons in the classroom and may have more realistic and perhaps more objective expectations of age appropriate behaviour.

Overall, with respect to its effectiveness, research from United Kingdom, Canadian, and United States samples supports the efficacy of the program in modifying behaviour of children with disruptive problems (Herbert, 1995; Scott et al., 2001; Webster-Stratton, 1994). Taken together, the findings here support the use of the Incredible Years parent training in a public clinic setting to improve important aspects of functioning in families with high risk solo mothers and children with moderate to severe levels of ADHD. Given recent meta-analytic findings reflecting poorer outcomes as a function of solo parenting, low SES, more severe forms of child behaviour, and a number of other relevant risk factors (Reyno & McGrath, 2006), these findings are encouraging, particularly in supporting such an intervention as a cost-effective first line approach in an overall continuum of care.

In terms of engagement, overall findings support the use of a weekly phone check-in and other strategies to encourage parents and keep them connected to the program. Compared to findings on drop-out in (a) child and family mental health generally (i.e., 40–60% drop-out rate; Nock and Kazdin, 2005), and (b) group-based parent-training program specifically (e.g., up to 70% drop-out in higher risk families, Dishion & Kavanagh, 2003), this program saw 100% completion by mothers with many risk factors for drop out (Reyno & McGrath, 2006). Of course, enthusiasm must be tempered based on the sample size. Nevertheless, findings here are consistent with other recent findings demonstrating the value of emphasising attention to potential barriers in parent-training programs. For example, Nock and Kazdin (2005) found that as little as 5 minutes to 45 minutes of therapy time devoted to motivation and engagement over the course of individually delivered parent training

increased completion rates by 21%. Dishion and Kavanagh (2003) reported that one home visit increased participation in a parent-training program from 30% to as high as 70% to 80% in families of higher risk adolescents. Thus, there is merit in raising the profile of engagement strategies in practice settings and in future research. One question for future research includes what strategy, or combination of strategies, maximises participation for high risk families while keeping costs contained. Another issue for future research is to evaluate engagement with next step — more intensive interventions — to evaluate their role in assisting parents and their children.

### Limitations of Current Research

Research shows that change occurs more predictably when parents are supported and encouraged by another adult in the home environment (Webster-Stratton, 1998). Only one participant (participant A) reported having a support person in the community to encourage her. This social support aspect might be given more emphasis in future training programs and related research on engagement and outcomes particularly with solo parents or those with low levels of support available. Second, given that this study was aimed at solo mothers, there were no fathers in the research group. Typically, fathers of children with ADHD are more verbose in their parenting style and tend to use more physical punishment than fathers of children without this disorder (Mash & Johnston, 1990; Treacy et al., 2005). Recent findings have indicated no significant difference in parenting stress between mothers and fathers of children with ADHD and that fathers reported a significantly smaller social support network compared to mothers (Treacy et al., 2005). Targeting fathers or perhaps other male role models, along with other forms of support in future studies would clarify whether the addition of such a component could assist a solo mother. A third limitation was a lack of independent child observations. Though adding to costs, including such observations would provide a different perspective on child behaviour in the home. Additionally, there was no formal educational assessment carried out for the participants' children as part of this research. It is well established that children with ADHD often have associated learning and or social difficulties. Finally, the baseline measures included multiple and varied intervals that were predetermined by the start date of the program. Clinical practicalities meant the intervals could not be extended to establish unequivocal stability in behaviour prior to treatment. However, in the majority of instances, a reasonable level of stability was indicated.

### Future Research and Conclusion

The role of group-delivered parenting interventions in a continuum of stepped care services (e.g., Ronan & Curtis, in press) might be clarified in future research. Given the low cost and increased efficiency compared to more intensive interventions (e.g., intensive, home-based service delivery for individual families, e.g., Curtis, Ronan, & Bordin, 2004), such a program might reduce the need for more intensive services for some, particularly in cases where parents can be engaged and have 'buy in' to those services.

As one example, implementing the teacher training program in combination with parent training (resulting in consistent practice across settings) might very well result in greater change but would also add to the cost. Webster-Stratton (2000)

found that teachers and parents from combined interventions reported a significantly higher level of collaboration, stronger home-school connections and children with fewer behaviour problems. Despite an increased cost, the effectiveness of the Incredible Years intervention would be expected to be enhanced if both parents and teachers worked together collaboratively (Power et al., 2002) and might be indicated in some cases. Research would help to clarify these issues.

This study made no attempt to monitor medication. A further study could work in close liaison with medical colleagues to track changes in medication over the treatment period. It would be anticipated that children might be managed on lower doses of stimulant medication when behavioural strategies are effectively in place (Jensen et al., 2005).

## Endnotes

- 1 Daily scores were averaged weekly across treatment and follow-up to increase interpretability of figures. Original daily scores are available from senior author.
- 2 Gaps in graph lines meant data were not able to be collected.

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