

# An evaluation of the Parents Plus Programme for pre-school children with conduct problems: A comparison of those with and without developmental disabilities

Mark Quinn,<sup>1</sup> Alan Carr<sup>2</sup>, Louise Carroll<sup>2</sup> & David O'Sullivan<sup>3</sup>

<sup>1</sup>Brothers of Charity, Southern Services Ireland; <sup>2</sup>University College Dublin; <sup>3</sup>University College Cork

## ABSTRACT

This study examined the effectiveness of the Parents Plus Programme for families of pre-school children with significant behavioural problems, comparing those with and without developmental disabilities. Twenty-two parents of children with developmental disabilities and conduct problems (the disability group), and 17 parents of children with conduct problems, but without developmental disabilities (the conduct problems group), were assessed before and after participating in the Parents Plus Programme, and at 10 months follow-up. More than 70% of cases in both the disability and conduct problems groups showed clinically significant improvement on the Total Difficulties scale of the Strengths and Difficulties Questionnaire. During the follow-up period, parents in the disability group showed a deterioration in psychological adjustment (on the General Health Questionnaire-12), while parents in the conduct problems group showed an improvement. Parents in the disability group reported a higher level of goal attainment compared with parents in the conduct problem group. Parents in both the disability and conduct problems groups evaluated the Parents Plus Programme equally positively. The Parents Plus Programme requires refinement to become more effective for families of pre-school children with developmental disabilities.

## INTRODUCTION

Rates of behaviour problems, especially oppositional behaviour, are three to four times more prevalent among pre-school children with developmental disabilities compared with children without such disabilities. In many cases these problems persist into later childhood and adolescence (Baker, Blacher, Crnic & Edelbrock, 2002; Baker, McIntyre, Blacher, Crnic, Edelbrock & Low, 2003; Volkmar & Dykens, 2002). For children with intellectual disability and autism in the 4-7 year age group, oppositional behaviour, non-compliance and aggression are among the most prevalent behavioural problems (Baker & Abbott Feinfield, 2007). These children require a highly structured social context within which adaptive behaviour is prompted, shaped and reinforced. Oppositional behaviour is pre-empted and

managed through a combination of ignoring and selective attention. Communication between children and carers is conducted in a way that takes account of the constraints entailed by the child's developmental disability (Carr, O'Reilly, Walsh & McEvoy, in press). A variety of parent training programmes have been developed to address such behavioural problems in children with developmental disabilities (Baker & Abbott Feinfield, in press; Gavidia-Payne & Hudson, 2002; Hudson, 2000; Lutzker & Steed, 1998), including group-based behavioural parent training programmes (e.g., Brightman, Baker, Clark & Ambrose, 1982; Chadwick, Morncilovic, Rossiter & Stumbles, 2001; Heifetz, 1977; Hudson, 1985; Hudson et al., 2003; Jocelyn, Casiro, Beattie, Dow & Kneisz, 1998; Kashima, Baker & Landen, 1988; Prieto-Bayard & Baker, 1986; Tavormina, 1975). In

*Address correspondence to: Professor Alan Carr, School of Psychology, Room F204, Newman Building, University College Dublin, Belfield, Dublin 4  
Tel: +353-1-716-8740 email: alan.carr@ucd.ie*

parallel with these developments in the disability field, video-modelling assisted training packages for use in group-based settings for parents of children with conduct problems (but without developmental disabilities) have been developed and the efficacy of these programmes is well established (e.g., Behan & Carr, 2000; Webster-Stratton & Reid, 2003). These programmes help parents to meet the developmental needs of pre-school children with behaviour problems. They help parents to: (a) develop the skills to prompt, shape and reinforce adaptive or prosocial behaviour; (b) pre-empt or extinguish oppositional behaviour; and (c) communicate with children in an effective way (Carr et al., in press).

The Parents Plus Programme is a group-based video-modelling assisted course which helps parents to achieve the above goals and was developed for use in Ireland (Sharry & Fitzpatrick, 1998). Within this context, it is the only available culturally sensitive programme of its type. There is growing evidence for the effectiveness of the Parents Plus Programme for families of children with conduct problems, both with developmental disabilities (Quinn, Carr, Carroll & O'Sullivan, in Press) and without them (Behan, Fitzpatrick, Sharry, Carr & Waldron, 2001; Sharry, Guerin, Griffin & Drumm, 2005). In a recent study we found that after treatment families of pre-school children with significant conduct problems and developmental disabilities who participated in the Parents Plus Programme fared better than their waiting-list control group counterparts (Quinn et al., in press). Behan et al. (2001) found that parents of 4- to 11-year-old children with conduct problems and normal ability levels who had completed the Parents Plus Programme reported greater gains in the attainment of personal parenting goals compared with those in a waiting-list control group. There was also a trend in the treatment group to report a decrease in externalising behaviour problems. A significant decrease in parent-child interaction related stress was also found in the treatment group. Gains in parents' goals and externalising behaviour were maintained at follow-up (5.5 months). Sharry et al. (2005) conducted an uncontrolled evaluation of the Parents Plus

Early Years Programme for children aged 1 to 6 years (which was developed after the inception of the study reported in this paper). This is a recently developed version of the Parents Plus Programme for pre-school children. They found that after the programme there was a significant reduction in parent-reported child conduct problems and hyperactivity, and parental stress. After treatment there was also significant goal attainment for parent-defined goals and significant improvement in observer-rated positive parent-child interaction.

Thus, available evidence indicates that, compared with waiting list controls, *children* with and without developmental disabilities show significant improvement in conduct problems following participation in the Parents Plus Programme. It would be valuable to know if the Parents Plus Programme leads to similar levels of improvement in *families* of children with and without developmental disabilities and, if so, whether short-term gains in both types of families are maintained at long-term follow-up. Finally, it would be valuable to know how parents from these differing family contexts evaluate the programme. The aims of the study reported in this paper were: (a) to examine the effectiveness of the Parents Plus Programme for families of pre-school children with significant behavioural problems, comparing those with and without developmental disabilities; (b) to determine whether improvements are sustained over a period of about a year; and (c) to determine parents' satisfaction with the programme.

## METHOD

### Design

This was a comparative treatment outcome study in which cases with developmental disabilities and significant conduct problems were assigned to the first treatment group (the disabilities group) and cases with conduct problems but no developmental disability were assigned to the second treatment group (the conduct problems group). All cases were assessed before (Time 1) and after (Time 2) participation in the Parents Plus Programme, and again 10 months after the end of treatment (Time 3).

### Participants

The study recruited 47 parents of children aged 4 to 7 years with clinically significant conduct problems who were attending the Irish public health service. Of these, 23 were recruited from four rural early intervention clinics for children with developmental disabilities. The remaining 24 were recruited from a child and adolescent mental health service for children with significant psychological problems but without

developmental disabilities. These two groups are referred to hereafter as the disability and conduct problem groups. Cases from clinics were consecutively assigned to the two groups. Ninety-five percent ( $n = 21$ ) of the disability group and 71% ( $n = 17$ ) of the conduct problems group completed 5 of the 6 programme sessions. Eighty-three percent ( $n = 19$ ) of the disability group and 46% ( $n = 11$ ) of the conduct problems group were followed up at Time 3. Drop-outs

TABLE 1

#### *Demographic characteristics of the disability and conduct problem groups*

			Disability Group ( $n = 22$ )	Conduct Problem Group ( $n = 17$ )
<b>Parental age</b>		<i>M</i>	36.5	33.58
		<i>SD</i>	5.99	3.82
<b>Childs age</b>		<i>M</i>	4.95	5.69
		<i>SD</i>	0.83	1.13
<b>Parental gender</b>	Male	<i>n</i>	7	6
		%	32%	35%
	Female	<i>n</i>	15	11
		%	68%	65%
<b>Childs gender</b>	Male	<i>n</i>	19	15
		%	86%	88%
	Female	<i>n</i>	3	2
		%	14%	12%
<b>SES</b>	1.Higher professional	<i>n</i>	3	0
		%	13%	0%
	2. Lower professional	<i>n</i>	7	7
		%	32%	42%
	3. Clerical	<i>n</i>	7	4
		%	32%	23%
	4. Skilled manual	<i>n</i>	5	4
		%	23%	23%
	5. Semiskilled	<i>n</i>	0	0
		%	0%	0%
	6.Unskilled	<i>n</i>	0	2
		%	0%	12%
	7.Unemployed	<i>n</i>	0	0
		%	0%	0%
<b>Marital status</b>	Married	<i>n</i>	21	15
		%	95%	88%
	Single	<i>n</i>	1	2
		%	5%	12%
<b>Number of children</b>		<i>M</i>	2.63	3.18
		<i>SD</i>	1.09	1.33

and completers did not differ significantly ( $p > .01$ ) on any demographic or Time 1 dependent variables.

In the disability group the primary diagnosis of the children was intellectual disability in 11 of the 16 cases (69%) who completed treatment, and autistic spectrum disorder with co-morbid intellectual disability in the 5 remaining cases (31%). In the conduct problems group the primary diagnosis was oppositional defiant disorder for 10 (67%) of the 15 treatment completers, and ADHD with co-morbid oppositional defiant disorder in the remaining 5 cases (33%).

From Table 1 it may be seen that the groups were similar in terms of families' demographic characteristics. In both groups the typical participant was a married middle-class woman in her mid-30s with two or three children, one of whom was a boy under 5 years with significant behaviour problems. The main difference between the two groups was the presence or absence of a developmental disability. Temper tantrums, non-compliance, over-activity and impulsivity were the most common behaviour problems. In all cases these difficulties had been present for at least a year. Parental distress and restriction of families' social activities were the most common consequences of these behaviour problems. Throughout the study participants in the disability group received routine services at early intervention clinics. These included multi-disciplinary support from speech and language therapy, social work, psychology and physiotherapy, and most children with disabilities attended 2 to 3 pre-school educational sessions per week. Children in the conduct problem group received routine multidisciplinary support from the child and adolescent mental health service. This included periodic psychiatric, psychological, paediatric and social work review. In the conduct problem group, two of the children with ADHD were on stimulant medication and one of the children with oppositional defiant disorder was on antidepressants during the study. None of the children in the disability group received psychoactive medication during the study.

### **Parents Plus Programme**

The version of the Parents Plus Programme (Sharry & Fitzpatrick, 1998) used in this study was conducted over six weekly sessions of two hours each with groups of up to 10 parents. The programme materials include two videos and a facilitator's manual. The manual contains directions on running the programme, session plans and handouts for parents. The videos show enacted scenes of parents interacting positively with their children, both avoiding misbehaviour and dealing with it when it occurs. They also show positive comments by clients who have used these parenting practices with their children. The video scripts were written in an Irish idiom and the actors all speak in Irish accents.

The topics covered in the programme include the following: using parental attention to change behaviour; play and special time; encouragement and praise; setting rules and helping children keep them; using active ignoring; and using time-out and other sanctions. Sessions on using reward systems effectively and solution-building for children which are described in the programme manual were dropped from the curriculum for this study because these modules were directed to older children, and because pilot interviews with prospective participants indicated that parents were reluctant to commit to more than a 6-session programme due to the considerable amount of travel involved and family commitments. A typical session involved the following: a welcome from the facilitator; a review from the participants of how they had put into practice the new ideas from the previous week's session; an introduction of the current week's topic; video input and discussion of the topic; role play and skills rehearsal; planning for the next week; and summing up. The programme uses a broadly cognitive behavioural model but a distinctive feature is that it is solution focused, drawing on parents' strengths and expertise and being highly collaborative in its approach.

### **Instruments**

The assessment protocol included instruments with good psychometric properties which assessed variables in the following domains:

child behaviour problems, parental and family adjustment, and family stress processes.

#### *Measures of child behaviour problems*

The Strengths and Difficulties Questionnaire (Goodman, 1997, 2001) is a 25-item inventory that assesses parents' perceptions of children's recent behaviour problems. Three-point response formats are used for each item and are scored from 0 to 2. The Total Problems scale of the Strengths and Difficulties Questionnaire has an internal consistency reliability coefficient above .7 and a test-retest reliability coefficient over six months of above .6. It has a stable subscale factor structure and strong criterion validity for predicting psychological disorders.

The Child Behaviour Checklist (Achenbach, 1991) is a 113-item inventory that assesses parents' perceptions of children's recent behaviour problems. Three-point response formats are used for each item and are scored from 0 to 2. The Child Behaviour Checklist has internal consistency and test-retest reliability coefficients above .7. It has a stable factor structure and strong criterion validity as indexed by correlations with other measures of psychological adjustment.

#### *Measures of parental and family adjustment*

The General Health Questionnaire-12 (GHQ-12; Goldberg & Williams, 1988; Goldberg et al., 1997) is a 12-item scale that assesses psychological distress over the preceding four weeks. It yields a single score, which in this study served as an index of parental psychological adjustment. Four-point response formats were used for each item and in this study item responses were scored from 1 to 4. The GHQ-12 has been found to have internal consistency reliability coefficients of .82 to .86 in most studies and strong criterion validity for predicting psychological disorders.

The Kansas Parental Satisfaction Scale (DeCato-Murphy, Donohue, Azrin, Teichner & Crum, 2003; James, Schumm, Kennedy, Grigsby, Sheckman & Nichols, 1985) measures parental satisfaction with children's behaviour, with the parenting role, and with parent-child relationships. The scores on its 3 items are summed to yield a Total Parental Satisfaction score. Seven-point response formats are used for each item

and are scored from 1 to 7. The Kansas Parental Satisfaction Scale has been found in a series of studies to have internal consistency reliability coefficients that range from .78 to .95. It has a stable single factor structure. The scale's criterion validity is supported by its moderate correlations with parental self-esteem, locus of control, marital satisfaction and severity of family/work conflicts.

The Family Assessment Device (Kabacoff, Miller, Bishop, Epstein & Keitner, 1990; Miller, Ryan, Keitner, Bishop & Epstein, 2000) is a 60-item inventory that evaluates parental perceptions of family functioning. Four-point response formats are used for each item. The overall scale has an internal consistency reliability above .7. The instrument's criterion validity has been supported through its moderate correlations with observer-rated family functioning, and adjustment of vulnerable family members with psychological and physical difficulties.

The Perceived Social Support Scale (Carr & O'Reilly, 2000) is a 20-item instrument that assesses parental perceived social support from spouse, friends, helping professionals and significant others. Seven-point response formats are used for all items, which are scored from 1 to 7. The Perceived Social Support Scale has an internal consistency reliability coefficient of .89. Its validity is supported by its inverse relationship with level of need in families of children with intellectual disabilities.

#### *Measures of family stress processes*

The Family Inventory of Life Events and Changes (McCubbin, Patterson & Wilson, 1982) is a 72-item scale that assesses sources of family stress. Each item has a standardised stress weighting and these are summed to yield a single family stress score. The instrument has internal consistency and test retest reliability coefficients above .8 and a stable factor structure. In support of its criterion validity, high scores on the instrument are associated with deterioration in functioning among vulnerable family members such as children with epilepsy or cystic fibrosis (Austin, Risinger, & Beckett, 1992; Lessenberry & Rehfeldt, 2004; Patterson & McCubbin, 1983).

The short form of the Parenting Stress Index (Abidin, 1995, 1997) is a 36-item parent-report scale for evaluating parental stress. Five-point response formats are used for all items. The scale has internal consistency and test-retest reliability above .7. The instrument has a stable 3-factor structure and strong criterion validity as indicated by significant associations with parental distress, poverty, low education and parenting challenges including severity of children's disabilities (Lessenberry & Rehfeldt, 2004; Reitman, Currier & Stickle, 2000).

The 52-item short form of the Questionnaire on Resources and Stress (Friedrich, Greenberg & Crnic, 1983) was used to assess the impact of a child with a developmental disability on the family. For all items *yes/no* response formats are used and these are scored 0 or 1. The scale has internal consistency reliability above .7 and a stable factor structure. It has strong criterion validity, as indicated by a correlation above .9 with the longer 285 item version of the scale, significant associations with parental distress and parenting challenges including severity of a child's disability, and an inverse relationship with the availability of professional support (Dyson, 1996; Honig & Winger, 1997).

### Procedure

The study was conducted with the ethical approval of involved institutions and the informed consent of all participants. The participants were recruited into the study at parent information sessions conducted over a number of evenings at the early intervention clinics, and child and adolescent mental health service, with full support from clinical multidisciplinary teams at these centres. At Times 1 and 2 the participants completed the assessment protocol in their treatment centres. At Time 3 the participants were mailed assessment packs. They were followed up with phone calls to remind them to return the packs and to answer questions about completing the protocol.

The Parents Plus Programme was conducted of over six weekly sessions. Ninety-five percent of the disability group and 71% of the conduct problems group completed five of the six programme sessions. Eighty-five percent of the

disability group and 79% of the conduct problems group completed more than 80% of the homework assignments. When participants missed sessions, they were contacted and the group facilitator helped them to plan attendance at future sessions. Handouts from the missed session were sent to them by post. Courses were provided to groups of 7 to 10 participants. Each course was facilitated by a senior psychologist with specialist training in the Parents Plus Programme and a co-facilitator. The facilitators included a principal social worker and a nurse specialist, both of whom held master's degrees in psychotherapy and worked in child and adolescent health services.

Prior to the programme, participants set at least three specific, measurable and achievable child- and parent-focused goals expressed in positive behavioural terms. Before and after treatment participants rated the frequency with which the target behaviour defined by each goal was achieved in the preceding month on 10-point scales ranging from *never* (1) to *always* (10).

After the final session of the programme, the participants completed a course evaluation form. The form covered the following areas: (a) overall satisfaction with the programme; (b) ratings of main topics; (c) rankings of the importance of specific aspects of sessions; (d) most helpful aspect of programme; (e) most helpful elements of teaching style; (f) most important skill to take away from the programme; and (g) most important thing to take away from the programme.

All Parents Plus sessions were audio-recorded, and a random sample of these were rated for programme integrity by checking that facilitators had covered the main topics specified in the programme manual. The contents of all selected sessions were rated as fully complete. This high level of integrity was due to the very explicit nature of the manual and the fact that all groups were facilitated by the principal investigator.

## RESULTS

### Improvement on group mean scores

To evaluate the statistical significance of the differential impact of the Parents Plus Programme on the disability and conduct

problems groups on dependent variable group mean scores, a series of 2 (Group)  $\times$  2 (Time) mixed-model ANCOVAs were conducted. In these analyses Group was a between-subjects independent variable with two levels, represented by the disability group and the conduct problem group. Time was a within-subjects independent variable with two levels: Time 2 (post-treatment assessment) and Time 3 (10-month follow-up assessment). Time 1 pre-treatment assessment scores served as covariates in these analyses. To control for Type I error (i.e., detecting spurious statistically significant intergroup differences as a result of conducting tests on multiple dependent variables), ANCOVAs were only conducted on the total scores of nine assessment instruments and a conservative  $p$  value of .01 was set using Bonferroni's adjustment for an overall experimentwise  $p$  value of .05, with 9 tests, 40 degrees of freedom and an average correlation of .24 between dependent variables (Simple Interactive Statistical Analysis, n.d.).

Table 2 shows that a statistically significant Group  $\times$  Time interaction was observed for the GHQ-12. This indicates that different patterns of improvement and deterioration in parental adjustment on the GHQ-12 occurred from post-treatment to 10-month follow-up. In the disability group mean scores increased from 18.85 ( $SD = 2.00$ ) at Time 2 to 23.10 ( $SD = 7.79$ ) at Time 3. In contrast, in the conduct problems group mean scores decreased from 25.63 ( $SD = 5.55$ ) at Time 2 to 19.27 ( $SD = 4.64$ ) at Time 3. To interpret this interaction, it is helpful to note that the cut-off score for the GHQ-12 is 24 (with the scoring system used in this study). Hence, the mean score for parents in the disability group moved from the non-clinical range almost into the clinical range during the 10-month follow-up period. During the same period the mean score for parents in the conduct problems group moved from the clinical to the non-clinical range.

Table 2 also shows that, for the Total Difficulties scale of the Strengths and Difficulties Questionnaire ( $p < .02$ ) and the Total Score of the Parenting Stress Index ( $p < .03$ ), Group  $\times$  Time interactions approached statistical significance. For both dependent

variables greater improvement occurred in the conduct problems group compared with the disability group. These trends require cautious interpretation.

### Clinical improvement rates

Clinical improvement rates in disability and conduct problem groups were compared in the following way. Cases were classified as Time 2 clinical improvers if, from Time 1 to Time 2, they moved from the clinical to the non-clinical range on the Total Difficulties scale of the Strengths and Difficulties Questionnaire. Eighteen of 22 cases in the disability group, and 15 of 17 in the conduct problem group were in the clinical range at Time 1. Nine of the 18 cases (50%) in the disability group that were in the clinical range at Time 1, compared with 4 of the 15 cases (27%) in the conduct problem group that were in the clinical range at the same phase showed clinically significant improvement on the Total Difficulties scale of the Strengths and Difficulties Questionnaire at Time 2. This difference in clinical improvement rates (50% vs. 27%) was not statistically significant,  $\chi^2(1, N = 33) = 1.87, p > .05$ .

Cases were classified as Time 3 clinical improvers if, from Time 1 to Time 3, they moved from the clinical to the non-clinical range on the Total Difficulties scale of the Strengths and Difficulties Questionnaire. Complete Times 1 and 3 data sets for this variable were available for 16 cases in the disability group and 9 cases in the conduct problems group who had Total Difficulties scores in the clinical range at Time 1. Twelve of the 16 cases (75%) in the disability group that were in the clinical range at Time 1, compared with 7 of the 9 cases (78%) cases in the conduct problem group that were in the clinical range at Time 1 showed clinically significant improvement on the Total Difficulties scale of the Strengths and Difficulties Questionnaire at Time 3. This difference in improvement rates (75% vs. 78%) was not statistically significant,  $\chi^2(1, N = 25) = 0.02, df = 1, p > .05$ .

At Times 2 and 3 clinical improvers and non-improvers did not differ on any demographic or dependent variables assessed at Time 1.

**TABLE 2.**  
*Status of the disability group and conduct problem group on measures of child problems and family adjustment at Times 1, 2 and 3*

Scale	Range Cut-Off	Disability						Conduct Problems						ANCOVA <sup>a</sup>		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	Group	Time	P	P	G x T	
<b>Behaviour Problems</b>	0-40	M 16.35	13.35	12.95	18.36	17.45	13.09	2.09	0.11	6.04*						
	16+	SD 4.47	3.88	3.69	3.73	6.08	4.20									
		Range 8-28	7-24	6-25	13-23	11-32	3-19									
<b>SDQ Total Difficulties</b>	0-236	M 39.33	34.00	36.27	57.72	50.09	50.00	0.05	1.77	1.25						
	44+	SD 21.26	20.33	24.31	24.16	30.51	33.45									
		Range 16-94	9-74	7-95	16-107	16-129	1-125									
<b>Behaviour Problems</b>	0-236	M 21.40	18.85	23.10	28.18	25.63	19.27	0.10	0.22	13.47**						
	23+	SD 4.00	2.00	7.79	7.89	5.55	4.64									
		Range 17-33	16-23	15-50	12-37	18-33	13-29									
<b>Parenting satisfaction</b>	3-21	M 13.60	15.75	15.95	10.54	13.27	13.45	2.57	1.35	0.29						
	<15	SD 2.52	2.27	3.39	3.26	2.53	3.44									
		Range 9-17	12-19	9-25	6-17	9-18	10.21									
<b>Family functioning</b>	60-240	M 161.95	172.75	172.75	167.81	171.72	185.18	1.18	0.52	1.49						
	120	SD 12.91	15.85	43.05	24.28	25.42	19.19									
		Range 139-193	140-206	0-215	136-223	131-208	154-207									
<b>Social support</b>	20-140	M 116.40	114.70	128.05	104.81	98.36	132.36	0.00	1.36	0.25						
	<98	SD 16.52	18.71	75.78	22.35	23.70	39.60									
		Range 64-138	73-133	83-439	73-140	43-138	54-183									
<b>Life Events</b>	0-3305	M 256.35	194.40	188.65	385.90	314.90	266.18	0.19	0.10	0.33						
	840+	SD 248.37	238.06	243.95	299.93	181.32	148.32									
		Range 25-915	0-1015	0-908	181-865	123-699	44-536									
<b>Parenting stress</b>	36-180	M 99.55	91.45	90.35	110.90	100.00	93.54	1.56	4.08	4.97*						
	82+	SD 26.00	20.63	21.67	17.06	24.20	21.48									
		Range 66-161	87-162	9-164	74-129	81-147	88-168									
<b>Parenting stress</b>	0-52	M 26.30	27.90	22.7	34.00	32.900	22.54	0.39	4.90*	2.33						
	30+	SD 6.32	4.42	8.44	9.92	14.08	9.30									
		Range 9-36	20-38	7.35	16-45	5-50	1.36									

Note. SDQ = Strengths and Difficulties Questionnaire; CBCL = Child Behaviour Checklist; GHQ-12 = General Health Questionnaire-12; KPS = Kansas Parental Satisfaction Scale; FAD = Family Assessment Device; PSSS = Perceived Social Support Scale; FILE = Family Inventory of Life Events and Changes; PSI = Parenting Stress Index; QRS = Questionnaire on Resources and Stress.

<sup>a</sup> In the ANCOVAs Time 1 scores were covariates and Times 2 and 3 scores were dependent variables.  
\*p < .05. \*\*p < .01.

TABLE 3.

*Parental goal attainment of disability and conduct problems groups at Times 1, 2 and 3*

	Range		Disability			Conduct Problems			Group	ANCOVA <i>F</i>	
			T1	T2	T3	T1	T2	T3		Time	G x T
<b>Child-centred goals</b>	01-10	<i>M</i>	2.68	7.40	7.45	2.95	5.28	6.14	10.78**	0.16	2.53
		<i>SD</i>	1.28	1.97	1.65	1.62	2.37	2.41			
<b>Parent-centred goals</b>	01-10	<i>M</i>	3.95	7.38	8.09	2.71	6.86	7.61	0.46	5.54	0.05
		<i>SD</i>	1.93	1.20	1.30	1.90	2.17	1.96			

Note. In the ANCOVAs Time 1 scores were covariates and Times 2 and 3 scores were dependent variables.

\*\* $p < .01$ .

### Reliable improvement rates

Reliable improvement rates in disability and conduct problems groups were compared in the following way. Cases were classified as reliably improved at Time 2 on the Total Difficulties scale of the Strengths and Difficulties Questionnaire if they achieved a score greater than 1.96 on the reliable change index using Time 1 and Time 2 data (Jacobson & Truax, 1991). In this analysis the reliable change index for each case was calculated by dividing the difference between Time 1 and Time 2 Total Difficulties scores by the standard error of measurement:  $RCI = (MT1 - MT2) / SEM$ . The standard deviation for the Total Difficulties scale of the Strengths and Difficulty Questionnaire in the normative sample is 5.8 (Meltzer, Gatward, Goodman & Ford, 2000) and the reliability coefficient is .72 (Goodman, 2001). Three of 22 cases in the disability group, and 1 of 17 cases in the conduct problem group were classified as reliably changed at Time 2. This difference in reliable improvement rates at Time 2 (13.6% vs. 5.9%) was not statistically significant,  $\chi^2(1, N = 39) = 0.63, p > .05$ .

Cases were classified as reliably improved at Time 3 on the Total Difficulties scale of the Strengths and Difficulties Questionnaire if they achieved a score greater than 1.96 on the reliable change index using Time 1 and Time 3 data (Jacobson & Truax, 1991). There were Time 3 data for the Total Difficulties scale of the Strengths and Difficulties Questionnaire for 20 cases in the disability group and 11 cases in the

conduct problems group. Four cases in the disability group, and 5 cases in the conduct problems group for which there were Time 3 data were classified as reliably changed at Time 3. This difference in reliable improvement rates at Time 3 (20% vs. 45.5%) was not statistically significant,  $\chi^2(1, N = 31) = 2.23, p > .05$ .

At Times 2 and 3 there were no significant differences ( $p < .01$ ) between reliable improvers and non-improvers on any demographic or dependent variables assessed at Time 1.

### Goal attainment

Patterns of goal attainment in the disability and conduct problem groups were compared in the following way. At Time 1 participants set three individualized child- and parent-centred goals which they rated on 10-point scales at Times 1, 2 and 3. Here are some examples of parent-centred goals: to get support and ideas from other parents in dealing with my child; to be able to understand my child's behaviour better; and to be able to understand my child more. Here are examples of child-centred goals: my child will play with his siblings for 10 minutes; and my child will stop hitting out at his parents and sister. For each participant, a mean child- and parent-centred goal attainment score was calculated for Times 1, 2 and 3.

To evaluate the statistical significance of the differential impact of the Parents Plus Programme on group mean goal attainment scores of disability and conduct problem groups, 2 (Group) x 2 (Time) mixed-model ANCOVAs

were conducted for child- and parent-centred goal data. In these analyses Group was a between-subjects independent variable with two levels, represented by the disability group and the conduct problems group. Time was a within-subjects independent variable with two levels: Time 2 (post-treatment assessment) and Time 3 (10-month follow-up assessment). Time 1 pre-treatment scores served as covariates in these analyses. Table 3 shows that a significant Group effect occurred for parental ratings of child-centred goals. Parents in the disability group obtained higher child-centered goal attainment mean scores compared with parents in the conduct problems group.

### Parent satisfaction

The satisfaction of parents from the disability and conduct problems groups was compared by evaluating the statistical significance of intergroup differences on continuous variables with *t*-tests, while chi-square tests were used for categorical variables. To control for Type I error, a conservative *p* value of .01 was adopted. From Table 4 it is clear that parents in both the disability and conduct problems groups evaluated the Parents Plus Programme equally positively. The only difference was that parents of children with conduct problems ( $M = 6.6$ ,  $SD = 2.3$ ) rated themselves as significantly less likely than parents of children with disabilities ( $M = 9.1$ ,  $SD = 1.2$ ) to use parenting skills learned on the Parents Plus course during the six-month period following course completion.

## DISCUSSION

This study compared the effectiveness of the Parents Plus Programme for families of pre-school children with significant behavioural problems and either with or without developmental disabilities. It also aimed to determine whether improvements were sustained over a long follow-up period, and to examine parents' satisfaction with the programme. What follows is a summary of key findings in relation to these aims.

First, for both the disability and conduct problems groups clinical improvement rates were above 70% at 10-month follow-up. Second,

parents in the disability group obtained significantly higher child-centred goal attainment mean scores after treatment and at follow-up compared with parents in the conduct problems group. Third, during the 10-month follow-up period, parents of children with disabilities and conduct problems showed a significant deterioration in psychological adjustment, while parents of children with conduct problems alone showed an improvement in psychological adjustment. Finally, parents in both the disability and conduct problems groups evaluated the Parents Plus Programme equally positively but parents of children with disabilities rated themselves as significantly more likely to use parenting skills learned on the course.

A number of features of these findings deserve comment. For both groups, improvement rates for children with and without disabilities based on children's Total Difficulties scores did not differ significantly. Thus, for child difficulties our data suggest that the Parents Plus Programme had a similar impact on both types of cases. However, for parents of children with disabilities, the programme led to significantly greater child-centred goal attainment, greater confidence that parenting skills learned on the course would be used after the course, but also to a gradual deterioration in parental psychological adjustment over the follow-up period. This pattern suggests that these parents used newly learned parenting skills effectively in dealing with their children's conduct problems. However, without the support of the Parents Plus weekly group, this process of dealing with the chronic challenge of parenting children with disabilities gradually took its toll on their own personal adjustment. In contrast parents of children with conduct problems (but no disabilities) were not as effective in achieving their child-centred goals and had less confidence that they would use newly acquired parenting skills. However, the skills they learned during the programme probably made the parenting process less stressful for them, and so their psychological adjustment improved during the follow-up period. This may be accounted for, in part, by the absence of the chronic stress of living with disability.

TABLE 4.

*Parents' evaluation of the Parents Plus Programme*

		Disability group	Conduct Problems Group
<b>Satisfaction</b>			
I would recommend the programme to other parents in my situation		100%	100%
Relevance of course (rated from 1-10)	<i>M</i>	8.93	7.60
	<i>SD</i>	1.29	3.78
Predicted use of course skills in next 6 months (rated from 1-10) <sup>a</sup>	<i>M</i>	9.19	6.60
	<i>SD</i>	1.22	2.30
<b>Ratings of topics</b>			
1. Catch your child being good (1-5)	<i>M</i>	4.53	4.87
	<i>SD</i>	0.64	2.23
2. Play (1-5)	<i>M</i>	4.46	5.00
	<i>SD</i>	0.64	2.13
3. Using praise and encouragement (1-5)	<i>M</i>	4.53	4.33
	<i>SD</i>	0.64	1.21
4. Setting consequences (1-5)	<i>M</i>	4.13	4.66
	<i>SD</i>	0.64	1.03
5. Active ignoring (1-5)	<i>M</i>	4.27	4.33
	<i>SD</i>	0.88	2.94
6. Time out and sanctions (1-5)	<i>M</i>	4.20	5.00
	<i>SD</i>	0.77	2.28
<b>Rankings of importance of content of sessions</b>			
1. Review of homework and previous week (1-6)	<i>M</i>	2.62	2.20
	<i>SD</i>	1.58	1.09
2. Homework (1-6)	<i>M</i>	2.93	3.00
	<i>SD</i>	1.69	1.82
3. Brainstorming (1-6)	<i>M</i>	3.12	3.25
	<i>SD</i>	1.54	1.50
4. Video and discussion (1-6)	<i>M</i>	3.37	3.50
	<i>SD</i>	1.45	2.38
5. Handouts (1-6)	<i>M</i>	3.81	3.75
	<i>SD</i>	1.55	2.06
6. Role play (1-6)	<i>M</i>	5.00	5.75
	<i>SD</i>	1.50	0.50
<b>Most helpful aspect of programme</b>			
Meeting and listening to other parents		47%	36%
Learning specific skills		32%	33%
<b>Most helpful elements of teaching style</b>			
Information very clear		37%	33%
Time given to each parent		16%	20%
<b>Most important skill to take away from the programme</b>			
To be calm		34%	13%
Active ignoring		30%	20%
Praise/encouragement/active listening		34%	20%
<b>Most important thing to take away from the programme</b>			
To be calmer, more confident, more positive as a parent/knowing			
I'm a good mum		63%	47%

<sup>a</sup>  $t(36) = 4.20, p < .01$ .

The main limitations of the study were the initial small sample size, the high drop-out rate from the conduct problems group, and the absence of a no-treatment control group. Small sample sizes of about 20 per group are not unusual for this type of study (e.g., Brightman et al., 1982; Chadwick et al., 2001; Heifetz, 1977; Hudson, 1985; Jocelyn et al., 1998; Kashima et al., 1988; Prieto-Bayard & Baker, 1986; Tavormina, 1975). High drop-out rates are also common in studies of parent training for children with conduct problems (Behan & Carr, 2000). However, both small group sizes and high drop-out rates compromise the power of statistical tests to detect real intergroup differences on dependent variables, so real treatment-related changes may have gone undetected. The absence of a no-treatment control group prevents conclusions from being drawn about the degree to which improvements were due to maturation or the passage of time.

With these shortcomings in mind, a number of features of the study suggest that considerable confidence may be placed in the results obtained. First, cases were representative of typical referrals to early intervention and child and adolescent mental health clinics involved in the study. These were 'difficult cases' that had not responded to routine services. Second, well-validated, reliable instruments were included in the assessment protocol. Third, the programme was delivered by trained therapists using detailed programme manuals and videos to ensure a high level of programme integrity, and the integrity of programme delivery was verified. A fourth reason for having confidence in the results is the duration of the follow-up period. The final round of data collection occurred about a year following the baseline assessment period and 10 months after the end of treatment. Thus the pattern of changes probably reflected enduring changes rather than short-term fluctuations. Finally, it is important to highlight that our study examined the impact of the programme on families whose children were receiving routine early intervention and child mental health services in addition to the parenting training programme. This factor contributes to the clinical validity of the results insofar as it indicates the incremental benefit of

participating in parent training for cases already involved in routine treatment.

The major new finding of this study is that a group-based, video-assisted behavioural parent training programme – which is effective for children with behaviour problems but without developmental disabilities – is effective in helping to alleviate behaviour problems in cases where children have developmental disabilities. To our knowledge, this is the first study to demonstrate this particularly useful finding. The findings of our study provide evidence to support the inclusion of pre-school children with developmental disabilities in video-assisted behavioural parent training programmes usually reserved for parents of children with behavioural problems in the absence of disabilities.

From a clinical perspective it may be concluded that for some families of pre-school children with significant conduct problems, with and without developmental disabilities, the Parents Plus Programme is an effective intervention and may be incorporated into routine early intervention and child mental health clinics in the Irish public health service. Since the completion of the study reported in this paper, a new version of the Parents Plus Programme specifically for pre-school children has been developed (Sharry, Hampson & Fanning, 2003). Therefore, it would be preferable to use this more developmentally appropriate version of the programme in services for pre-schoolers. From a research perspective, our study requires replication with a larger sample and with the pre-school version of the Parents Plus Programme.

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