EVALUATION OF TWO TREATMENTS FOR CHILDREN WITH SEVERE BEHAVIOUR PROBLEMS: CHILD BEHAVIOUR AND MATERNAL MENTAL HEALTH OUTCOMES

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Abstract. There is a substantial literature reporting the co-occurrence of maternal depression and child behaviour problems. Behavioural interventions have proven efficacy in the treatment of conduct problems, and a number of studies have reported gains in parental mental health following parent training. The mechanisms by which this is achieved are not clear, but it is likely that interventions that include parent training in observation skills and exposure to success will impact on both the child's conduct problems and maternal depression. This paper reports on the outcomes of two treatments for children with severely disruptive behaviour, the standard treatment offered by a Child and Adolescent Mental Health Service, and an intensive parent training intervention. It was predicted that the more specific skills training in the intensive treatment would make improvements in maternal health and child behaviour more likely. Significant overall improvements were found in measures of child behaviour, parental practices and maternal mental health. A correlation emerged between the improved child behaviour and the improved parenting strategies. Significant improvements for the intensive treatment group were seen on every measure. Significant improvement in the measure of maternal mental health contrasted with little change for the standard treatment group.

Keywords: Maternal depression, conduct problems, parent training, child behaviour.

Introduction

Depression in adults and conduct disorders in childhood are both very frequent in their occurrence. There is a substantial literature showing the co-occurrence of maternal depression and child behaviour problems (Kazdin, 1990; Murray et al, 1999). Alpern and Lyons-Ruth (1993) report that 50% of mothers of children referred for treatment of behavioural difficulties show clinical levels of depression.

Depression and conduct problems

Adult depression and child behaviour problems have a number of features in common. Both occur more frequently in situations of socio-economic disadvantage (Brown & Harris, 1978; Dumas & Wahler, 1983; Farrington, 1979, 1995) and both include significant numbers who are not referred for, or actively seeking, help (Brown & Harris, 1978; Goldberg & Huxley, 1980; Hobbs, 1982). Both people with depression and mothers of conduct problem children tend to use over-general and non-specific descriptions of autobiographical memory (Brittlebank, Scott, Williams, & Ferrier, 1993; Wahler & Dumas, 1989; Wahler & Sansbury, 1990; Williams, 1996). Both also show insensitivity to the cues of others and have poor observation skills (Brody & Forehand, 1986; Cummings & Davies, 1994; Wahler & Dumas, 1989; Webster-Stratton, 1992). Poor problem solving is another factor common to both people with depression and the mothers of conduct problem children (Beck, 1989; DeGarmo & Forgatch, 1997; Evans, Williams, O'Loughlin, & Howells, 1992).

Depression as a contributor to the emergence of conduct problems

Some research has suggested that maternal depression can be a causal factor in the emergence of conduct disorder (Bell & Harper, 1977; Rutter, 1996). Depressed mothers exhibit many of the features known to be associated with the development of conduct problems such as low rates of praise and failure when monitoring their child's behaviour (Webster-Stratton & Herbert, 1994). There are differences in the behaviour of depressed mothers towards their children from early in their children's lives which, if they persist, are associated with the emergence of identifiable behavioural problems (Loeber, 1990). Cummings and Davies (1994) suggest that depressed parents may be particularly inclined to engage in negatively reinforced behaviour sequences, and submitting to the demands of their children to minimize effort and energy expenditure.

Behavioural problems as a contributor to maternal depression

Parental psychopathology can be precipitated by problematic child behaviour particularly when the child has characteristics, such as health problems or temperament, that make the parenting task difficult (Webster-Stratton & Spitzer, 1996). Littlewood and McHugh (1997) have shown that prolonged infant distress, which the mother can neither alleviate nor understand, raises self-doubts in the mother. Repeated failures in disciplining their child may also lead to the mother's decreased self-esteem, lack of perceived control over situations and lack of confidence (Teti, Gelfand, & Pompa, 1990; Webster-Stratton & Hammond, 1998).

Other influences on conduct problems and depression

Fergusson and Lynsky (1993) suggest that parental depression and child conduct disorder may not be causally related but may both be independently influenced by other factors, such as social disadvantage. Regardless of the cause, once both problems exist it is likely that they will exert a continuing negative influence on each other, since both lead to repeated failure and perceived lack of control over circumstances (Lytton, 1990).

Learned helplessness, depression and conduct problems

Ferster (1973) provided the first functional account of depression. His ideas were developed by Seligman (1974, 1975, 1981) who developed an account of depression as learned helplessness. Ferster saw the inactivity in the face of problems, which occurred in depression, as arising from the failure of previous efforts to be rewarded. Webster-Stratton and Spitzer (1996) draw heavily on the concept of parental learned helplessness as a means of understanding the development of conduct problems. Parents give up trying to change their child's behaviour when previous efforts have failed, and respond only with strategies to remove the immediate problem (Cummings & Davies, 1994).

Treatment of conduct problems

Parenting behaviours contribute to, or maintain, problem child behaviour. Interventions therefore aim to change parent behaviour and behavioural interventions involving parents are of proven efficacy in the treatment of conduct problems. However, maternal depression is a predictor of poor outcomes for interventions with conduct problem children (Forehand, Furey, & McMahon, 1984; McMahon, Forehand, Griest, & Wells, 1981), as are other factors associated with both depression and conduct problems, including social isolation and socio-economic deprivation.

Some people have argued that it may be necessary to treat both maternal depression and the child behaviour problem (O'Hara & Zekoski, 1988), but more recently it has been recognized that parenting programmes may have an important role to play in improving parental mental health (Barlow & Coren, 2000). A number of studies report gains in parental mental health following parent training (Forehand, Wells, & Griest, 1980; Hutchings, 1996a, 1996b; Todres et al., 1993), but the mechanisms by which this is achieved are not explored. If there are common factors contributing to both problems, the skills taught in a parenting intervention that can benefit other aspects of maternal functioning may account for these findings.

Seligman's (1975) work shows that the most effective strategy to overcome learned helplessness is forced exposure to success, i.e. forced exposure to the experience that responding produces a rewarding consequence. For parents of conduct problem children, this means developing skills in the accurate and detailed descriptions of behaviour to use as a basis for effective decision making and problem solving, which will be reinforced by their success. Such experience of success, if repeated across settings and problems, results in the person regaining control. Working with both the parent and child increases the likelihood of success in parent training, especially if there is an opportunity for practising new parenting strat-

egies. These skills, if subsequently used in other aspects of the person's life, might also be expected to impact on the depression itself.

In summary, therefore, children with more severe conduct problems are likely to have mothers who are clinically depressed and whose behaviour may be understood in terms of learned helplessness, including the characteristics of the lack of appropriate observation and problem solving skills. These parental characteristics have contributed to parenting practices that have not been rewarded. Interventions that address these skill deficits through training in observation skills and exposure to success are likely to impact on both the child's conduct problems and maternal depression. Structured parent training, with repeated practice and the experience of its effectiveness, should achieve this.

This study evaluated two treatments for children with severely disruptive behaviours who were referred to a Child and Adolescent Mental Health Service (CAMHS). The evaluation focused on those with more severe behavioural problems from within the referred group, i.e. children who were referred by a clinician to a secondary tier agency, and were, by parental report, one standard deviation above the clinical cut-off. The rationale for the study was that the literature suggested that children with more severe problems have a poorer prognosis and that this was also believed to be the case by the agency staff themselves.

Treatment outcome was measured by indices of child behaviour, parenting style and maternal depression. The results are discussed in terms of possible mechanisms that might be operating to explain the findings. The two treatments reported are: (i) a standard treatment offered by a child and adolescent mental health service; and (ii) a parent-training intervention with an intensive unit-based component.

All participants were mainly given behavioural management advice, which targeted unacceptable child behaviours such as non compliance, aggressive and destructive behaviour, and behaviour surrounding meal times and toilet use. Parents were given advice on how to respond to their child's behaviour in a clear and consistent way, and to encourage more acceptable behaviour by providing reinforcing consequences for appropriate, but not inappropriate, behaviours. The difference between the treatments concerned the mode of delivery.

Standard treatment

The standard treatment was delivered by the CAMHS team, which comprised child psychiatrists, clinical child psychologists, specialist social workers and child therapists. To gain a measure of the behavioural content of the standard treatment, the therapists were asked about the extent of their use of 10 specific behavioural intervention strategies in their work with child behaviour problems. An average of five strategies was used in interventions with the standard treatment with parents (see Table 1), suggesting that the interventions were primarily behavioural and focused on direct work with parents.

Intensive treatment

The intensive treatment was undertaken by two consultant clinical psychologists. All 10 strategies, with the exception of agreeing written goals, occurred for all of the intensive treatment families. However, the intensive treatment differed mainly in its inclusion of three

Table 1. Frequency of intervention strategy usage by type

Behavioural intervention strategies used in standard treatment	No. of cases	Sample percent (%)
1. Recording observations of parent/s and child	4	40
2. Design record sheet/ask parents to keep records	7	70
3. Agree and provide written summary of homework tasks	3	30
4. Set homework reading assignments	5	50
5. Provide written agreements on goals	1	10
6. Provide star charts/intervention record sheets	5	50
7. Use own observation to identify reinforcers/punishers	4	40
8. Provide specific feedback to parent based on observation/ parental records	8	80
9. Teach parents to reinforce appropriate behaviour	8	80
10. Discuss what is reinforcing problems with parent/s	9	90
Total sample	10	100%

5-hour sessions of unit-based treatment during which videotaped recordings of parent-child interactions were used to give feedback to parents. This programme started with a home visit to assess the natural environment by observation and interview. Most of the observational assessment was done in the unit where parents observed themselves and their children on video, received feedback and practised new management strategies. The unit provided a comfortable domestic environment and also the technical equipment and facilities necessary to support this work. There is a one-way observation mirror and there are cameras in both the living room and the kitchen where families prepare and eat meals.

Each family was observed during baseline and during treatment. Bug-in-the-ear equipment was used to allow the therapist to give the parent advice on what to do and to praise and encourage the parent for attempting new strategies of management. The rationale for this treatment was that necessary parental behaviours (particularly discipline practices) could be introduced and rehearsed under controlled conditions away from the environment where the child's disruptive behaviours had developed and were at strength. When different patterns were established, generalization to home conditions could be carefully supported and monitored. As part of such a programme, feedback of videotaped interactions to a parent of their own and their child's behaviour would train parental observation skills and guided practice during the intensive part of the programme. The aim was to ensure parental success in using new strategies. This was intended to enable mothers to undertake successful problem solving using an accurate data base. Improvements in the mother's parenting style and her perceived control over her child's behaviour would be expected following this exposure to success.

Both forms of treatment would be expected to impact on child behaviour. Both were delivered by child mental health professionals and both offered behaviour management strategies to teach parents to respond to their children's behaviour in a clear and consistent way. However, in such a sample of children with severe problems, improvements in maternal mental health may be necessary to improve the long-term prognosis for the children of those mothers. It was predicted that the more specific skill training included in the intensive treatment programme would make this more likely to occur for that group.

Hypotheses

1. Child behaviour in both groups would improve following treatment, and children receiving intensive treatment would show greater improvement than those who received standard treatment.
2. Parental discipline practices would be poor at baseline and improvements in child behaviour would be associated with changes in parental discipline practices.
3. Fifty percent of the mothers of children in the sample would be experiencing significant levels of depressive symptoms.
4. Maternal mental health would improve for both groups as a result of treatment, and the mothers of children in the intensive treatment group would show greater improvement than those who received standard treatment.

Method

Sample

The sample was drawn from new referrals, over a period of 20 months, to a CAMHS, of children aged 2–10 years, with conduct problems. If, based on referral information, the child had no significant physical or intellectual deficit and the problem had been present for more than 6 months, the parent/s were sent an Eyberg Child Behaviour Inventory (ECBI; Eyberg, 1980). If the ECBI score was in the top half of the clinical range (148 or over for Intensity; 17 or over for Total Problem) for either the Intensity or Total Problem scales and the other scale score was within the clinical range (127 or over for Intensity; 11 or over for Total Problem), parents were invited to participate in the study.

An assistant psychologist made a home visit to the parents of children who qualified, and explained that the project was comparing two forms of treatment. Forty-two of the 47 families (90%) whose ECBI scores met the project criteria agreed to participate. Initially, referrals were randomly assigned to each treatment group. Unfortunately, there were not quite as many potential participants as had been predicted by the pilot study. The allocated time for commencing treatment with the intensive sample was pre-determined and, in order to complete the project within the agreed time-span towards the end of the experimental year, the most long-standing qualifying referral who had not started treatment was allocated to the next intensive treatment slot as it became available. The final family to receive intensive treatment was allocated in June 1997, and participants for the standard treatment group continued to be recruited until August 1997 (the final three children). There was no significant difference between the intensive and standard groups in mean time (2.4 months) between referral and onset of treatment between the two groups.

Sample description

Baseline data were available for 41 participants,[1] of whom 22 families received intensive treatment and 19 standard treatment. Outcome data were available for 34 children (Intensive treatment $N = 21$: Standard treatment $N = 13$).

[1.] Data from one family, originally allocated to the standard treatment group, were excluded as the mother subsequently informed the project that she had given false information in her responses because of the presence of her partner.

Demographic data

Table 2 describes the characteristics of the participating families. On the whole, these were similar. Independent sample *t* tests found no significant differences between the intensive and standard group on any demographic variable.

Sample attrition

Although all but one of the intensive treatment group participated in the follow-up, six of the standard treatment group had dropped out of treatment and did not participate in follow-up. No significant difference existed on any baseline measure between the sample considered here and those lost to follow-up (Hutchings, Nash, & Smith, 1999).

Measures

The Eyberg Child Behaviour Inventory (ECBI; Eyberg, 1980). The Eyberg is a parental report measure of child behaviour. It yields two scales: Intensity, which measures the frequency of a range of problem behaviours; and Total Problem, which indicates how many of these behaviours were perceived as a problem to the parent. The clinical cut-off points for these two scales are 127 and 11 respectively. The ECBI is often used to gain an initial measure of the behaviour problems of children referred to a CAMHS. Its use as a screening device is reported here.

The following measures were obtained before and after treatment.

Two versions of the *Child Behaviour Checklist* (CBCL; Achenbach & Edelbrock, 1986) were used for ages 1–3 and 4–16 years. The CBCL has evolved over the last 20 years and allows for a range of personality/psychological factors to be assessed based on a list of behavioural problems. The externalizing T score derived from the CBCL provides an index of delinquent and aggressive behaviours.

The *Parenting Scale* (Arnold, O'Leary, Wolff, & Acker, 1993) parental disciplinary style. An overall score was computed from responses on a scale 0 to 7, to provide a global index of dysfunction in parental discipline practice.

The *Beck Depression Inventory* (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was used to measure maternal depression. The full 21-item version of the BDI was used.

Table 2. Group comparison of family characteristics

	Standard group (*N* = 19)			Intensive group (*N* = 22)			
Sex: Males	16			19			
Females	3			3			
No. of families receiving benefit	14			13			
No. of single parents	5			9			
	Mean	SD	Range	Mean	SD	Range	*p* value
Mother's age (years)	28	5.76	23–48	29.64	4.87	22–38	.331
Age of child (months)	73.25	22.31	27.4–104.3	70.89	26.11	33.2–120.8	.76
No. of children in family	3	1.15	1–6	2.64	1	1–5	.447

The *General Health Questionnaire* (GHQ, Goldberg, 1972; 30 items). The GHQ was used as a broad measure of psychiatric morbidity, assessing present state in relation to usual state. It was scored in the conventional way.

Follow-up

Follow-up measures were taken as near to 6 months after the start of treatment as possible. However, for one family in the treatment group this was at 4.5 months because the child had been prescribed Ritalin and it was felt that the follow-up should be undertaken before the start of this medication. No significant difference was found between the mean time to follow-up for the intensive and intensive groups.

Missing data

Measures were occasionally not assessable or missing from a participant's profile. In cases where the instrument in question had clear instructions for dealing with missing data, these instructions were adhered to. In other cases a listwise deletion was used as the amount of data missing was not extensive. This has obvious statistical power implications given that the sample is small, particularly in the standard group, but is also the most conservative method of considering missing data (Rovine & Delaney, 1990).

Procedure

Two assistant psychologists conducted initial and follow-up interviews. One conducted most of the initial interviews and the other most of the follow-ups. Interviews took one or two visits depending on the length of time taken for completion of the forms. The same assistant psychologist interviewed two families at baseline and follow-up. The psychologist conducting the initial interviews was not aware of the status (standard/intensive) of the family for those interviews conducted over the first 22 months. However, it would have been known to the assistant psychologists that participants who agreed to take part in the project after June 1997 had been allocated to the standard treatment group ($N = 3$). At the follow-up interview information was sometimes informally given by the family that would have alerted the assistant psychologist to treatment status. However, since the information was derived from parental reports using standardized questionnaires, this could not be considered to be a source of bias in the data.

Therapeutic contact time

Families in the intensive treatment group had an initial home visit, 3 days (10am–3pm) at the unit, and home or clinic based follow-up as required. The standard treatment group had weekly or less frequent home or clinic visits. Contact time was recorded for the 6-month period from the start of treatment.

Intensive treatment families had approximately three and a half times more contact time with the service, 25 hours compared with 7 hours for the control families (see Table 3). The bulk of the time that the intensive treatment families were in contact with the service was spent in the Unit (an average of nearly 16 hours) (see Table 4), but there was also extended

Table 3. Actual service contact time for each family

Family	Maximum time	Minimum time	Average
Intensive group ($N = 22$)	36 hours	14 hours	25.1 hours
Control group ($N = 19$)	12 hours	3 hours	7.1 hours
Difference	24 hours	11 hours	18 hours

Table 4. Average number and duration of types of contact

Family	Initial interviews	Unit visits	Home visits	Clinic visits etc
Intensive group	1.05	3.14	6.86	0.50
($N = 22$)	2.10 hours	15.70 hours	6.86 hours	0.50 hours
Control group	1.06	n/a	3.87	1.07
($N = 19$)	2.10 hours		3.87 hours	1.07 hours
Difference	none	n/a	3 visits	half a visit

follow-up through home visits: an average of about seven visits over the 6-month period. Standard treatment families were also seen for home visits following the initial interview, receiving an average of four visits and one clinic visit.

Clinics were rarely used for project families, as home visits are used to help parents to generalize skills from the clinic to the home situation. The group differences in the number of home visits can be partly accounted for by the greater engagement of the intensive treatment families with the service. More of the control families dropped out of treatment during the six-month period and there was more non-attendance and cancellation in the standard treatment group.

Results

At baseline, the mean ECBI intensity score for the standard group was 173.21 ($SD = 21.31$) compared with 175.36 ($SD = 27.23$) for the intensive group and the mean ECBI Total Problem score for the standard group was 23.05 ($SD = 5.95$) compared with 22.73 ($SD = 6.78$) for the intensive group. Independent sample t tests found differences between the groups were not significant and the means for both groups fell well within the top half of the clinical range (see Figure 1).

Table 5 shows the mean group scores for family measures at baseline. The mean scores of both groups were above the clinical cut-off scores of the CBCL (64), Parenting scale (2.6), BDI (9) and GHQ (5).

Child behaviour

The first hypothesis was that all children would show improvement, because all were receiving treatment, but that the children receiving intensive treatment would show a greater improvement in their behaviour than the children who received standard treatment. To test this hypothesis, the CBCL data were analysed using a mixed two-factor ANOVA
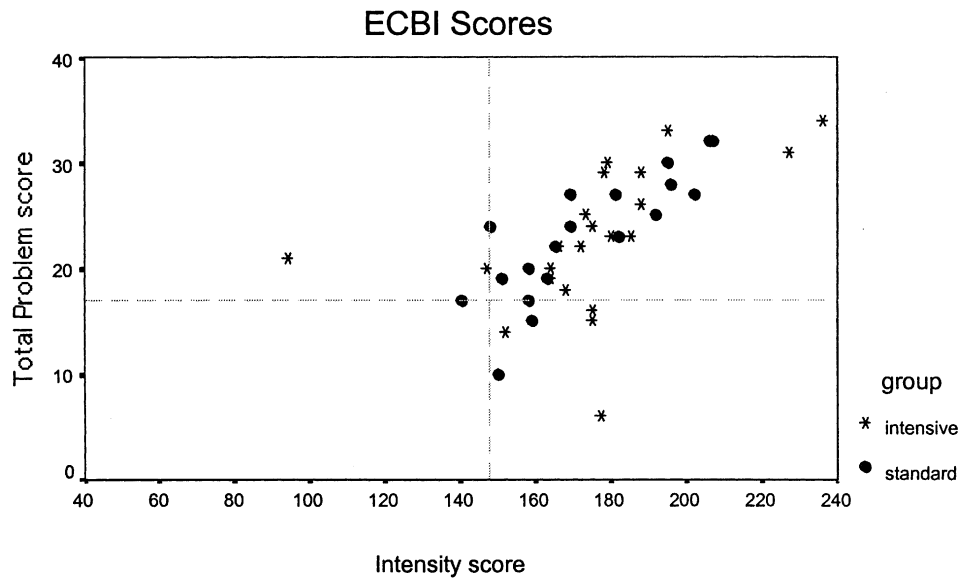
ECBI Scores

Figure 1. Mean ECBI scores at baseline

Table 5. Group comparison of scores on baseline measures

Baseline measures	Standard (*N* = 19) Mean (*SD*)	Intensive (*N* = 22) Mean (*SD*)	*p* value
Child Behaviour Checklist	79.4706 (26.39)	89.6364 (26.43)	.241
Parenting scale	3.7058 (.636)	3.2465 (.903)	.142
Beck Depression Inventory	13.4737 (10.43)	14.1364 (14)	.866
General Health Questionnaire	6.9375 (6.7)	9.9048 (9.29)	.287

(group × time) with two planned Bonferroni multiple comparisons (standard group time 1–time 2; intensive group time 1–time 2).

The mean externalizing T score for the standard group at time 1 was 75.3 (*SD* = 5.9) and at time 2 was 67 (*SD* = 9.23). The means for the intensive group were 74.2 (*SD* = 9.28) and 63.9 (*SD* = 11.1) respectively. Figure 2 shows that the intensive group mean at time 2 fell just below the clinical cut off, whereas the standard group mean remained above this value.

Child behaviour improved significantly in both groups. There was no significant interaction and the main effect of time on CBCL scores was found to be significant ($F1,30$ = 19.36, $p < .001$). Bonferroni *t* tests also revealed a significant difference between time 1 and time 2 for both the intensive group $t(20) = 3.84$, $p < .05$, and the standard group $t(10) = 3.07$, $p < .05$.
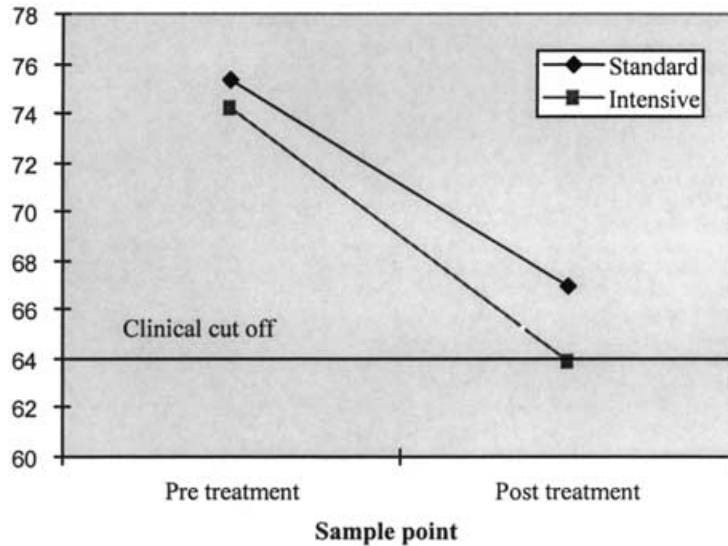
Figure 2. Mean CBCL externalizing T scores by group pre and post intervention

Parental discipline practices

Hypothesis 2 was that improvements in child behaviour would be associated with improved parental discipline strategies as measured by the Parenting Scale. In this sample of children with significant behaviour problems parents had poor discipline strategies. The mean score for the non-clinical group ($N = 51$, age = 28.6 months, SD 3.3), used when the scale was standardized, was 2.6 ($SD = .6$) (Arnold et al., 1993). The intensive group mean at time 1 was 3.2 ($SD = .93$) and at time 2 was 2.47 ($SD = .83$). The standard group mean at time 1 was 3.8 ($SD = .59$) and at time 2 was 3.1 ($SD = .94$). The significant main effect of time on the parenting scale ($F1,20 = 14.1$, $p < .001$) indicates an overall improvement in self-reported parenting practice for the sample. No interaction was found for the parenting scale data. However, Bonferroni t tests revealed a significant improvement for the intensive group ($t(15) = 3.82$, $p < .05$), and a non significant difference for the standard group ($t(6) = 1.6$, $p = .162$). Significant overall improvements were therefore shown in both child behaviour and parenting practice.

Table 6. Correlations between the Parenting Scale and CBCL externalizing T scores

	CBCL 1	CBCL 2	P. SCALE 1	P. SCALE 2
CBCL 1	1.00			
CBCL 2	.3140	1.00		
P. SCALE 1	−.0452	.2230	1.00	
P. SCALE 2	.0543	.5274*	.6403*	1.00

* Significance < .01
Child Behaviour Checklist scores at baseline (CBCL 1) and at follow-up (CBCL 2)
Parenting Scale at baseline (P. SCALE 1) and at follow-up (P. SCALE 2)

Table 6 shows that although there was no correlation between the Parenting Scale and CBCL at baseline, at follow-up a significant correlation emerged between these two measures. This association between the improved child behaviour and the improved parental discipline strategies is an important finding given that for both groups the presumed mechanism of change in child behaviour was changes in parental behaviour, which should be reflected in their discipline practices.

Maternal mental health

Seventeen mothers (50%) reported significant levels of depression (above the clinical cut-off of 10) as measured by the Beck Depression Inventory (BDI) at time 1. This is consistent with the hypothesis that at least 50% of the sample would report clinically significant levels of depression. Hutchings et al. (1999) report that this figure rises in other indicators of mental health problems. It was hypothesized that maternal depression (BDI) would improve in both groups. It was expected that there would be greater improvement in the intensive treatment group. This hypothesis was investigated using ANOVA plus Bonferroni multiple comparisons.

The mean BDI score for the standard group at time 1 was 12.4 ($SD = 7.9$) and at time 2 was 10 ($SD = 11.5$). The means for the intensive group were 13.7 ($SD = 14.2$) and 7.9 ($SD = 9$) respectively, the latter value being below the clinical cut-off point (see Figure 3). ANOVA revealed a significant main effect on time on BDI scores ($F1,31 = 6.55$, $p < .05$). There was no significant interaction, but Bonferroni comparisons revealed a significant difference for the intensive treatment group, $t(18) = 3.33$, $p = .05$ and a non-significant difference for the standard group $t(11) = .77$, $p = .46$.

Although the results indicate that improvement in the intensive group was not significantly better than in the standard group, the significant improvement for the intensive group
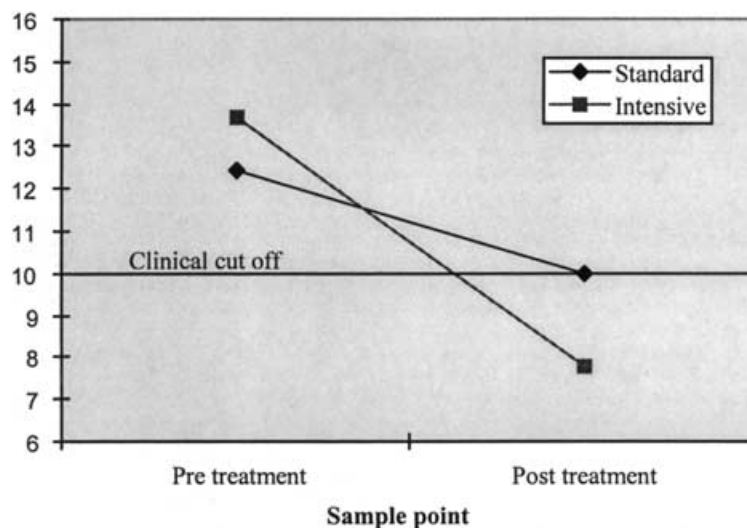

Figure 3. Mean BDI scores by group pre and post intervention

compared to little change for the standard group supports the view that mothers of children in the intensive group showed greater improvements in their mental health, as measured by the BDI, than those who received standard treatment. A similar finding has been reported for the General Health Questionnaire measure (Goldberg, 1972) (see Figure 4).

Mean GHQ score at time 1 for the standard treatment group was 6.5 ($SD = 6.5$) dropping to 5.7 ($SD = 8.9$) at time 2. Figure 3 shows that the intensive group mean at time 2 fell below clinical cut-off, while the standard group mean remained within the clinical range.

ANOVA revealed a significant main effect of time on GHQ ($F1,29 = 6.15$, $p < .05$). There was no significant interaction but, again, Bonferroni *t* tests revealed a significant difference between time 1 and time 2 for the intensive group ($t(18) = 4.64$, $p < .05$), but no significant difference for the standard group ($t(11) = .35$, $p = .729$).

Discussion

Child behaviour

The general and significant improvement in child behaviour as measured by the CBCL was a welcome result given that the amelioration of problematic child behaviour is the ultimate aim of both treatments, which were provided by members of a specialist child and adolescent mental health team. The lack of a significant difference by time-point comparison is disappointing, but not surprising given the small sample size and, in particular, the small number of standard treatment follow-up cases. Almost one third (32%) of the standard treatment group opted out of treatment and became lost to the service. It is not unreasonable to assume that their outcomes would not have been as good as those who remained in contact with the service. The intensive treatment brought the initially high mean CBCL score to below the
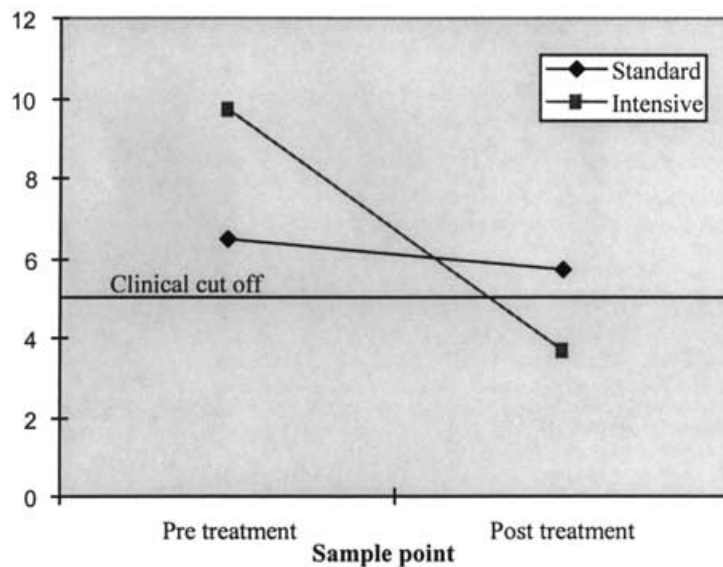

Figure 4. Mean GHQ scores by group pre and post intervention

clinical cut-off, whereas the mean score for the standard group, although dropping significantly, was still above the clinical cut-off at follow-up. This greater rate of improvement suggests that the intensive treatment was advantageous and would continue to be over time. Also, given the significant improvement in maternal mental health for this group, it could be posited that the improvement in child behaviour found in the intensive group is likely to be maintained long-term. Mainstream treatment has been shown to fail many children in the longer term (Webster-Stratton, 1990) and, for this group with severe problems, the long-term prognosis for the standard group may be relatively poor.

Parental discipline

The treatment received by both groups was mainly parent training. The predicted change in parental report of discipline practices occurred for both groups. Both forms of treatment appear to help to counter dysfunctional discipline practices and, as predicted, there was a clear association between more functional parenting practices at follow-up and improved child behaviour. This is an important result because it provides evidence that improvements in parenting behaviours targeted by the intervention impact on the referral problem, which is disruptive child behaviour.

Maternal mental health

The high prevalence of depression in mothers of children with conduct disorders was confirmed in this sample of children with severely disruptive behaviours (Alpern & Lyons-Ruth, 1993; Hutchings, 1996a, 1996b). Irrespective of the direction of effect, and in view of the negative impact depression has on the management of child behaviour (e.g. Brody & Forehand, 1986), the reduction of maternal depression is an important outcome for parent training programmes (Webster-Stratton & Spitzer, 1996) and the benefits for both child and maternal mental health is being recognized in Britain at Government level (HMG, 1998; DOH, 1999).

As with earlier studies (Mullin, Proudfoot, & Glanville, 1990; Hutchings, 1996a), analysis of the BDI data revealed an improvement for the sample overall. As predicted, there was a significant reduction in the BDI scores of mothers in the intensive treatment compared to a non-significant difference for the standard group. The intensive treatment involved direct work with parents and children in supervised practice of new parenting strategies, enabling successful implementation of new responses to child behaviour (Seligman, 1974). The greater improvements in maternal mental health for the intensive group appear to predict promise for the intensive treatment's efficacy. This is an important preliminary finding as maternal mental health, particularly depression, is strongly associated with disruptive behaviours and has a negative influence on outcome (Brody & Forehand, 1986).

Kazdin (1997) points out that most research is brief and done with volunteer parents whose children have less severe problems. The present study of children with more severe problems was designed to produce findings of relevance to clinical practice and to avoid the problems identified by Kazdin (1997), which make much research difficult to translate into clinical settings and irrelevant to the needs of clinicians working with children with more severe problems.

One third of the standard treatment group was lost to the study. These had moved home

and also lost contact with the service. A similar number of the intensive treatment group had also moved home but had maintained contact with the service (Hutchings, Nash, & Smith, 1999). Goldiamond (1975) suggests that what keeps clients in therapy is seeing that they are getting what they came for. It was the view of the agency staff that the standard agency response was not sufficiently powerful to impact on these children with more severe behaviour problems. It is possible that this could account for the loss of six families from standard treatment and thereby from follow-up. Since all of the children had severe behaviour problems it seems probable that the results reported for the standard treatment group represent those for whom outcomes were most favourable.

In conclusion, both treatments produced improvements in maternal report of child behaviour, maternal discipline practice and maternal mental health. However, only the intensive treatment, with its emphasis on accurate observation and behavioural rehearsal, showed significant improvements on all measures. It is predicted that the significant improvement in maternal mental health will lead to longer-term maintenance of treatment gains for this group. In view of the paucity of studies looking at the treatment needs of children with more severe problems (Kazdin, 1997), a grant has been obtained from the Wales Office of Research and Development in Health and Social Care for a further follow-up of this sample at 4 years post-treatment.

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