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Impact of a general practice based group parenting programme on the mental health of children and parents 12 months post intervention: quantitative and qualitative results from a controlled trial.

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Abstract

Objective To test the effectiveness at one year of the Webster Stratton Parents and Children Series group parenting programme in a population sample of parents

Design multicentre block randomised controlled trial

Setting 3 urban General Practices in Oxford.

Participants Parents of children aged 2-8 years in 116 families who scored in the upper 50% on a behaviour inventory.

Intervention Webster-Stratton's 10-week parenting programme led by health visitors.

Outcome measures. Eyberg Child Behaviour Inventory, Goodman Strengths and Difficulties Questionnaire, General Health Questionnaire, Parenting Stress Index, Rosenberg Self Esteem Scale. Qualitative interviews with volunteer parents from both intervention and control groups immediately post intervention.

Results The intervention significantly reduced child behaviour problems and improved mental health at immediate and 6-month follow-ups. One-year differences between control and intervention groups were not significant. Possible methodological reasons for this are: Hawthorne effects and contamination of control group. At interview parents spoke of a need for further sessions and a desire for attendance by both parents. They also described how, as a result of the programme, they had gained in confidence,

felt less stressed, shouted less and achieved more cooperation from their children.

Conclusions Parenting programmes have the potential to promote mental health and reduce social inequalities, but further work is needed to improve long-term effectiveness.

Introduction

Parenting has an impact on emotional, social and cognitive development, playing an important role in the aetiology of mental illness, educational failure, delinquency and criminality.¹ Parenting is to some extent socially patterned,^{2,3} and interventions to support the development of 'helpful' parenting therefore have a role to play in combating social inequalities in health.⁴ The best mental health and social outcomes are achieved by parents who supervise and control their children in an age appropriate way, use consistent positive discipline, communicate clearly and supportively, and show warmth, affection, encouragement and approval.^{5,6,7,8}

A number of professional bodies have recently recommended provision of services to support the development of helpful parenting including universally available and widely accessible group parenting programmes.¹

Group parenting programmes have been shown to have a positive impact on the mental health of children and parents in the short term.^{9,10,11,12} Positive results have been obtained from randomised controlled trials and other studies with parents of children with clinically defined behaviour disorders,^{9,13,14} children at high risk of behaviour problems,^{9,15} and to a lesser extent with normal populations.^{16,17} They have also been obtained in trials of interventions for parents and children of different ages.^{18,19} The number of

trials carried out in the UK is small.^{13,15,20,21} A recent systematic review concluded that these programmes are effective in the long term,¹² but most of the trials on which this review was based used a waiting list control design, and as a result outcome data are not reported on the control groups beyond 6 months. Several well-known studies with results at one year, only report results for the intervention group.^{20,22,23,24}

This paper reports the twelve month follow-up results from a controlled trial of the Parent and Child Series Incredible Years programme^{22,15} delivered by health visitors in a general practice setting, drawing on both quantitative and qualitative data. The methodology and six-month results, showing a positive impact on a key aspect of children's mental health (conduct) and a short term benefit on one aspect of parental mental health (social functioning), have been reported elsewhere.²⁶

Methods

In brief, all parents of 2-8 year old children registered with three general practices in a socio-demographically mixed area of Oxford were invited to participate in a survey (69.4% response rate) which included a validated child mental health / behaviour inventory²⁷ (Eyberg Child Behaviour Inventory). One parent in each family where inventory scores for at least one child in the family fell above the median (i.e. worse behaviour) were invited to participate. In families with more than one child, the index case was the child with the highest score. Parents of children with a diagnosed learning difficulty or previous treatment for behaviour problems were excluded. 116 parents (30% of those invited) consented to enter the trial. Consenting parents were allocated to one of two groups on the basis of their availability, preferences for day and time of attendance, and need for crèche provision. Key demographic factors including single parenthood, ethnic group, occupational status and child's ECBI score and age were also taken into account in group allocation in order to balance the groups on key confounding variables. The two groups, one comprising 60 parents and one comprising 56 parents, were then randomly allocated to receive the intervention or to be part of a control group.

Data was collected using questionnaires comprising a number of socio-demographic questions and the following validated mental health inventories: Eyberg Child Behaviour Inventory²⁷ (ECBI); Goodman Strengths

and Difficulties questionnaire²⁸ (SDQ); Parenting Stress Index²⁹ (PSI); 28-item General Health Questionnaire³⁰ (GHQ); and Rosenberg Self Esteem Scale³¹ (RSE). The questionnaire was administered pre-intervention, immediately post-intervention and at 6-months and 12-months follow-up.

Analysis was conducted on an intention-to-treat basis using paired t-tests and Wilcoxon matched pairs signed rank-test (as appropriate for the distribution of scores) to calculate the significance of differences between baseline and follow-up scores within groups. Grouped t-tests and Mann-Whitney U-tests were used to calculate the significance of between group differences.

All parents from the first three of six participating parenting groups and the equivalent control group parents were invited to participate in a semi-structured interview at 2-4 months post-intervention. Twenty-six intervention group and 15 control group parents agreed to take part in an interview. Questions included views about parenting in general, support in the role of parenting, difficulties they had experienced as parents, and their approach to parenting. In addition, the intervention parents were asked about their views of the parenting programme, the programme leaders and personal outcomes. Interviews were conducted in the parents' home, audiotaped with the parents' permission, transcribed in full and analysed thematically.

Twelve-month questionnaires also included open-ended questions for all parents to record their views about the intervention and about personal outcomes.

The intervention

The Incredible Years programme from the Parent and Child Series²²⁻²⁵ is primarily a behavioural intervention, which uses videotape modeling and experiential learning covering child play, praise, rewards, ignoring undesired behaviour, limit setting, positive discipline such as time-out and logical consequences of behaviour. Parents set themselves goals, undertake homework each week and report back on progress. Sessions are of 2-hours duration and take place weekly over a 10-week period. Five health visitors and two nursery nurses received three days training in facilitating the programme, from a local voluntary organisation, the Family Nurturing Network, prior to the start of the trial. They also attended supervision sessions on a weekly basis during the course of the programmes. The focus of the supervision was on addressing problems arising from the delivery of the programme (i.e. pacing of the presentation of materials; group dynamics use of role-play etc), in addition to ensuring the integrity of its delivery. Four of six parenting groups met at a local medical centre and two groups met at a local community centre. Four groups met in the evening and two in the daytime with crèche facilities available.

Results

Quantitative

Groups were well balanced in terms of key demographic and social factors.²⁶

The age of the included children ranged from just under a year to eleven years, and just over half of the children were boys. Thirty-four (31 mothers and 3 fathers) of the 60 parents in the intervention group attended 50% or more of the sessions. Loss to follow-up was 23% (n=13) at twelve months in the control group and 28% (n=16) in the intervention group (28 of the 34 attenders and 16 of the 26 non-attenders provided data) (Fig 1).

Table 1 reports the mean score and standard deviation for all outcomes pre-intervention and at six- and twelve-months follow-up in control and treatment groups separately. The scores of all parents who returned questionnaires at each stage are included in each mean.

At twelve months significant change ($p < 0.05$) in a positive direction was observed for intervention group children on the intensity scale of the ECBI, and the total, conduct and hyperactivity scales of the SDQ. Significant change in a positive direction was also observed for parents on all scales of the GHQ, with the exception of the anxiety subscale; on all scales of the PSI, with the exception of parent-child interaction subscale; and on the RSE scale. However, control group children also showed significant change on both scales of the ECBI and on two scales of the SDQ (total and conduct).

They also showed significant improvement on all scales of the PSI, with the exception of the parent-child interaction subscale, and on the RSE.

Between group differences (those showing differences in mean change between groups) are shown in Table 2 for all outcomes. At 12 months there were no significant differences between the control and intervention group as regards any of the scales measuring children's emotional and behavioural adjustment. There was, however, a significant difference on one of the scales measuring parental mental health - the GHQ depression scale.

Figures 2-4 show the plotted change over time in mean scores for the outcome measures that showed a significantly greater change in the intervention than control group at either 6- or 12-months: ECBI intensity scale, SDQ conduct subscale and GHQ depression scale. These figures suggest that, although there was a small increase in ECBI intensity scale scores at twelve months, improvements in mental health and behaviour in intervention group children were largely maintained over time. The loss of statistical significance between groups was predominantly due to a continuing fall in control group scores between six and twelve months. In contrast GHQ depression scores for parents were different at the start of the trial with those in the intervention group being much higher. The significant reduction in depression scores in this group brought their scores down to the level of the control group at all three post intervention measurements.

Qualitative results

Themes which emerged from the interviews are described more fully elsewhere.^{32,33} Briefly the intervention group parents described what the parenting programme had meant for them at a personal level, and both groups described the difficulties encountered in parenting young children.

Ways in which parents felt that the intervention had helped.

Both control and intervention group parents commonly and clearly expressed lack of control, frustration, stress and anger in relation to parenting. All but one parent valued the intervention. They reported that the programme had enabled them to feel more able to cope, more in control, less stressed and angry, less isolated and more supported. With regard to specific behaviours, they reported shouting at their children less and using positive discipline strategies.

Factors important for success

Important factors for the success of these programmes reported by parents included non-judgmental support on the part of the health visitors; the support of other parents, particularly the feeling that they were not alone in struggling with being a parent; and being invited to try new approaches to parenting as opposed to being told how to parent.

Factors limiting effectiveness

Some mothers reported difficulty in implementing changes in their parenting because of lack of support from their spouses, and many expressed a preference for attending programmes with their spouses. Several parents also reported difficulty sustaining the changes that they had made whilst attending the group and suggested additional sessions at a later date to reinforce what they had learnt.

Reasons for dropping out

A number of reasons were provided for dropping out. These included increased work commitments, geographical move away from the area and holidays.

Impact of the trial on the control group

One of the themes to emerge from the data collected from the control group was that the completion of the trial questionnaires had encouraged them to reflect on their parenting and may have had a beneficial influence on their relationship with their children.

At the 12-month follow-up, one intervention group parent (a non-attender) and 4 control group parents said that they had attended a community based parenting programme during the period between the 6-month and 12-month follow-ups.

Discussion

The aim of this trial was to test the potential effectiveness of a universal open-access programme. The block randomised design was chosen because it is a more practical design to use for trials of health promoting interventions delivered in groups.²⁶ Only parents of children whose behaviour fell in the worst half of the distribution were invited to take part because of concerns about documenting change in population samples using instruments designed to identify and measure change in clinical populations. While only 57% of the participants attended at least half of the sessions, this compares well with the attendance rate in other parenting programmes. However, despite the use of an intention-to-treat analysis, there nevertheless remain significant missing data (25%) which may have biased the findings.

It has been possible to demonstrate a positive short-term (up to 6 months) impact of this parenting programme on the mental health and behaviour of children. It has also been possible to demonstrate a positive impact on parents' mental health. However, while within group differences showed that improvement in child and parental mental health was maintained at 12 months, between group analyses, showed only one significant change (in parental depression), and this result was attributable to the high score of the intervention group at the beginning of the trial. The absence of significant findings at 12-months was largely due to the fact that between the 6 and

12-month follow-up periods, the scores of the control group improved, while the scores of the intervention group remained similar to those obtained at 6 months. Had this trial been conducted using waiting list controls, as have most earlier trials of parenting programmes, these results would have been interpreted as demonstrating long-term effectiveness.

The 12-month results reported in this study might be partly attributable to regression to the mean and/or to improvement in scores resulting from expected maturational change.²⁶ Such effects, however, would have been expected to be maximal during the first six months of the trial, and the further improvement in control group scores after six months was therefore unexpected.

Qualitative data from interviews with control group parents provided some indication that there may have been a Hawthorne effect operating in this group as result of taking part in the trial. The control group parents described taking more interest in their children's behaviour than they had previously done, and may well have been more open to the information about positive parenting widely available in the media and from other parents than they would have been if they had not been taking part in the trial. Nine percent (4/44) of control group parents had taken the initiative to find and attend a community based parenting programme between the six-month and one-year follow-up. Some of the improvement in control group

scores may therefore have been due to real improvements in parenting inadvertently brought about by the trial (contamination).

The qualitative data also provided some important information regarding the impact of parenting programmes. Parents described developing a sense of empowerment, feeling more supported and less alone, and more able to cope with problems. These are important components of positive mental health to which standard mental health inventories may not be especially sensitive.

The qualitative data showed that many parents would have liked to attend the programme with their partners. This finding is consistent with the results of other studies,³⁴ and many service providers are trying to find ways to encourage fathers to attend parenting programmes.³⁵ Some parents also observed that the behaviour changes the programme required of them were difficult to sustain over time and would have welcomed further support, both from professionals and from self-help groups. Previous studies have suggested that between 30-50% of families who take part in parenting programmes are likely to show no benefit because of other events in their lives, and may therefore need more than a single intervention.³⁶ Evidence that parents may want continuing support after attending a parenting programme has also been provided in other studies,^{9,33} and some research

has suggested that parents could benefit from flexible open-access sources of support as opposed to further structured programmes.³⁷

Behaviour change is widely acknowledged to be difficult to achieve by those working in health promotion, and models of behaviour change developed to describe and support changes in health related lifestyles (smoking cessation, exercise participation) may be helpful in interpreting the results of this trial.^{38,39} In particular, positive change followed by relapse is not uncommon in behaviour change programmes. Neither is it uncommon to have several attempts before finally changing for good.

Overall, the 6-month results are consistent with the findings of other studies which show that parenting programmes can have a positive impact on parent and child mental health, and that this improvement can be maintained over time.^{10,12} However, the non-significant findings at 12-months illustrate the importance of conducting follow-up with both intervention and control groups. Collection of qualitative data enabled a better understanding of the results.

Conclusions

While this study does not provide the evidence base to demonstrate the long-term effectiveness of this parenting programme in a non-clinical population in the UK, there are reasons to believe that the results may have been partly attributable to Hawthorne effects and to contamination of the control group rather than to lack of intervention effectiveness. The study has provided evidence that parents value the intervention and that they perceived it to enable them to make beneficial changes to their parenting and to improve their mental health. It has also confirmed the findings of other research which points to ways of improving the long-term effectiveness of these programmes.

The 30% uptake and 57% attendance rates, while at first sight disappointing, are impressive for a health promoting intervention in which those invited did not have acknowledged health problems. They suggest a level of acceptance of the potential value of such programmes which indicates that universal coverage could be a reasonable long-term goal.

If this goal is to be pursued, further development of parenting programmes is necessary – particularly with regard to attracting fathers as well as mothers and to providing reinforcement sessions after programmes have finished. Further UK trials with long-term follow-up will also be needed, in particular larger trials, including all families, which use outcome measures

capable of measuring change at the positive end of the mental health spectrum. Such trials will benefit from incorporating qualitative as well as quantitative methods of data collection.

Box 1: Quotations from interviews with control and intervention group parents.

Intervention group

How parents felt the intervention had helped

'This helped me to be calm and to deal with things as they crop up instead of letting them go on [...] time out has really helped – it's not a cure [...] but I am much calmer – I can just do my task calmly and not have the anger.'

Important factors for success

'I didn't disagree with any of the comments or advice that was given because the facilitators didn't make it 'you don't do this or that' it was 'it might work, it might not work'. There was no right or wrong'

Further support from friends and family:

'I do wish in a way that I could have dragged my husband along! [...] it would have been difficult to arrange but one [...] of the key things to come out of it was that it was important that you agreed on how you were going to deal with certain issues before they arose so that you could sort of present a united front'

Further support from extra sessions post intervention:

'... it's so difficult [...] because [...] for years and years you've [...] been [...] the way I've been brought up and [...] then in [...] 8 or 10 weeks [...] they totally change your way of [...] doing things and then after that you're left to your own devices [...] it's so easy to [...] go backwards.'

'I think if we did [...] meet up, it would help [...] perhaps just once a month or something, perhaps just to talk over any problems or perhaps think about any new things people have tried or [...] refine [...] the techniques that we already know about, that would be quite good. And I think the others felt the same.'

Control group

'It is nice to know that we all encounter the same/similar problems with our children. Sometimes when I shout at my child I feel guilty and the questions made you realise we all do it sometimes.'

'I think that over the course of the study I have seen my responses become more positive both in relation to child's behaviour and my attitudes. I might not have been so aware of this had I not answered the same questions on a regular basis. Thank you!'

Table 1

Mean (SD) scores and number of respondents at each time point

	Baseline		6 month follow up		12 month follow up	
	Control	<i>Intervention</i>	Control	<i>Intervention</i>	Control	<i>Intervention</i>
ECBI						
Intensity score	126.6 (16.9) 56	<i>125.8 (22.8)</i> 60	118.8*(20.3) 46	<i>110.2*(21.6)</i> 45	115.3*(21.2) 43	<i>111.3*(27.0)</i> 43
Problem score	10.2 (7.2) 54	<i>9.9 (9.5)</i> 52	8.8*(6.5) 41	<i>6.2*(6.3)</i> 38	7.9*(6.7) 41	<i>7.3(6.9)</i> 40
SDQ						
Total difficulties	12.0 (5.4) 48	<i>12.4 (6.2)</i> 47	10.1*(4.7) 45	<i>9.5*(6.4)</i> 46	10.2*(5.0) 43	<i>10.1*(6.1)</i> 43
Conduct problems	2.6 (1.8) 50	<i>2.8 (1.9)</i> 52	2.4 (1.6) 45	<i>1.9*(1.5)</i> 46	2.0*(1.4) 43	<i>1.8*(1.4)</i> 43
Emotional score	2.9 (2.3) 50	<i>2.8 (2.1)</i> 51	2.1*(1.9) 45	<i>2.2 (2.3)</i> 46	2.5(2.3) 43	<i>2.7(2.0)</i> 43
Hyper-Activity	4.4 (2.5) 48	<i>5.1 (3.0)</i> 51	3.9*(2.3) 45	<i>4.0*(2.3)</i> 46	4.0(2.3) 43	<i>3.8*(2.6)</i> 43
Peer problems	2.0 (1.7) 50	<i>1.8 (1.9)</i> 49	1.7 (1.7) 45	<i>1.5 (1.9)</i> 46	1.7(1.5) 43	<i>1.8(2.1)</i> 43
Prosocial score	6.7 (1.4) 50	<i>7.3 (1.7)</i> 51	7.0 (2.0) 45	<i>7.7*(1.6)</i> 46	7.1(1.9) 43	<i>7.6(1.5)</i> 43
Impact	1.0 (1.2) 50	<i>0.9 (1.5)</i> 51	0.7*(1.0) 46	<i>0.7 (1.4)</i> 45	0.8(1.1) 40	<i>0.7(1.9)</i> 31
GHQ						
Total score	4.3 (4.9) 49	<i>5.1 (4.9)</i> 51	3.0 (4.6) 46	<i>2.7*(4.2)</i> 45	3.2(4.8) 42	<i>2.9*(3.9)</i> 43
Anxiety	1.5 (1.9) 50	<i>1.6 (1.9)</i> 51	0.9*(1.7) 46	<i>1.0*(1.8)</i> 45	1.4(1.9) 42	<i>1.3(2.0)</i> 43
Somatic symptoms	1.7 (2.2) 50	<i>1.7 (1.8)</i> 51	1.2 (1.9) 46	<i>1.2*(1.8)</i> 45	1.2(2.1) 42	<i>1.0*(1.3)</i> 43
Depression	0.2 (0.6) 49	<i>0.7 (1.5)</i> 51	0.09 (0.4) 46	<i>0.07*(0.3)</i> 45	0.1(0.5) 42	<i>0.1*(0.4)</i> 43
Social dysfunction	1.0 (1.6) 49	<i>1.0 (1.7)</i> 51	0.8 (1.8) 46	<i>0.4*(1.3)</i> 45	0.6(1.4) 42	<i>0.5*(1.1)</i> 43
PSI						
Total	86.5 (18.4) 50	<i>85.0 (20.4)</i> 51	83.4 (17.0) 46	<i>79.0*(20.9)</i> 46	78.4*(18.4) 43	<i>77.1*(19.2)</i> 43
Parent domain	29.4 (7.2) 50	<i>29.5 (9.2)</i> 51	29.0 (7.1) 46	<i>27.7 (8.6)</i> 46	26.0*(7.9) 43	<i>27.2*(6.7)</i> 43
Difficult child	34.4 (8.9) 50	<i>32.2 (8.3)</i> 51	32.2 (8.3) 46	<i>30.0*(9.1)</i> 46	30.9*(9.4) 43	<i>28.3*(8.9)</i> 43
Parent child interaction	22.7 (5.9) 50	<i>23.3 (6.2)</i> 51	22.2 (5.4) 46	<i>21.7*(6.4)</i> 46	21.6(5.4) 43	<i>21.7(5.9)</i> 43
RSE						
	29.7 (4.7) 50	<i>29.2 (5.0)</i> 51	30.3 (4.7) 46	<i>29.5 (4.4)</i> 46	31.4*(4.1) 43	<i>30.7*(4.2)</i> 42

*NB For SDQ prosocial scores and RSE scores, increase = improvement;
* = significant change from baseline at p<0.05*

Table 2

Results of grouped t tests and Mann Whitney U tests to show t or z values, degrees of freedom, and p values for the differences in the changes in scores from baseline to follow up between the control and intervention group.

	6 month follow up	12 month follow up
ECBI		
Intensity score	t = 2.3, 89 d.f., p=0.024	t = 0.81, 84 d.f., p = 0.42
Problem score	t = 0.06, 73 d.f., p = 0.95	t = 0.14, 73 d.f., p = 0.89
SDQ		
Conduct problem score	t = 2.2, 80 d.f., p = 0.034	z = -0.15, p = 0.88
Emotional score	z = -0.57, p = 0.57	z = -0.12, p = 0.91
Hyperactivity	z = -0.56, p = 0.57	z = -0.26, p = 0.80
Peer problems	z = -0.21, p = 0.83	z = -0.99, p = 0.32
Prosocial score	z = -1.47, p = 0.14	z = -0.24, p = 0.81
Total difficulties	t = 1.19, 77 d.f., p = 0.34	t = 0.29, 75 d.f., p = 0.77
Impact	z = -0.74, p = 0.46	z = -0.44, p = 0.66
GHQ		
total	t = 0.94, 80 d.f., p = 0.24	z = -0.60, p = 0.55
Anxiety	z = -0.10, p = 0.92	z = -0.77, p = 0.44
Somatic symptoms	z = -0.75, p = 0.45	z = -0.32, p = 0.75
Depression	z = -1.68, p = 0.09	z = -2.25, p = 0.025
Social dysfunction	z = -1.27, p = 0.20	z = -1.7, p = 0.87
PSI		
total	t = 1.3, 82 d.f., p = 0.20	t = -0.40, 81 d.f., p = 0.69
Parent domain	t = 0.72, 82 d.f., p = 0.48	t = 0.69, 81 d.f., p = 0.49
Difficult child domain	t = 0.89, 82 d.f., p = 0.38	t = -0.10, 81 d.f., p = 0.93
Parent child interaction	t = 1.75, 82 d.f., p = 0.09	t = -0.10, 81 d.f., p = 0.93
SES		
	t = 0.20, 82 d.f., p = 0.84	t = -0.27, 81 d.f., p = 0.79

Figure 1

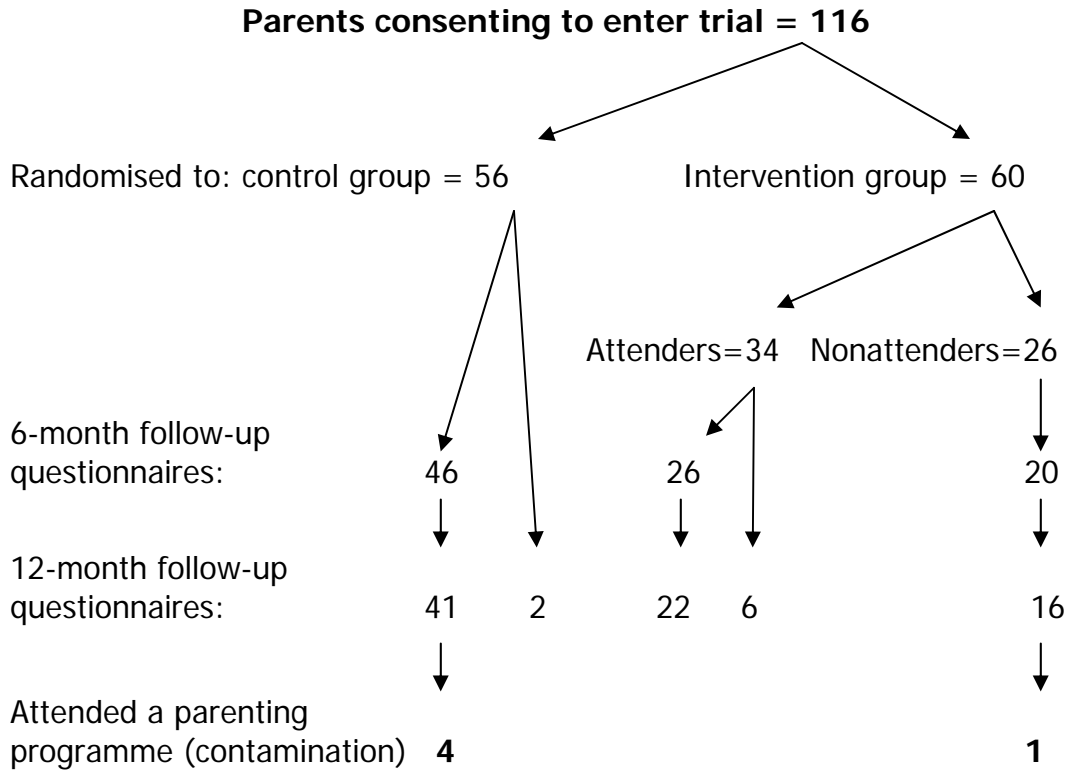


Figure 2

ECBI intensity scale scores at baseline, immediate post intervention, 6-months post intervention and 12-month post intervention

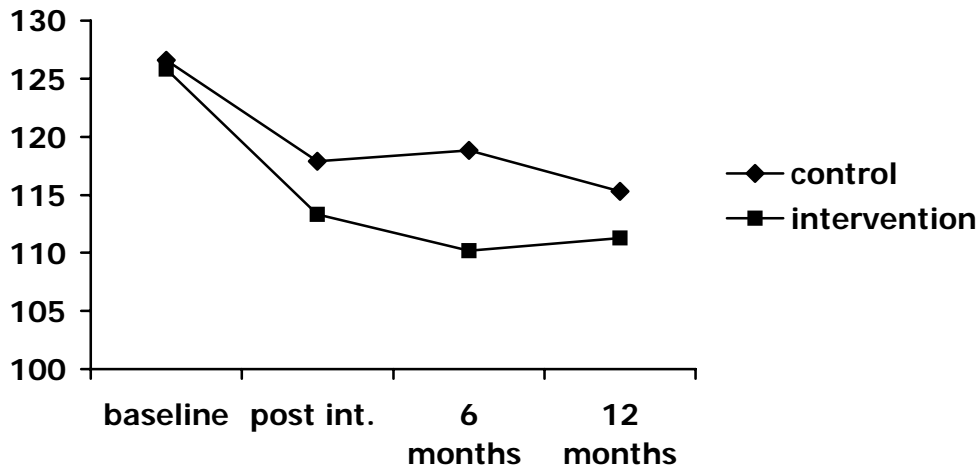


Figure 3

SDQ – conduct problem score at baseline, immediate follow up, 6-month follow up and 12-month follow up

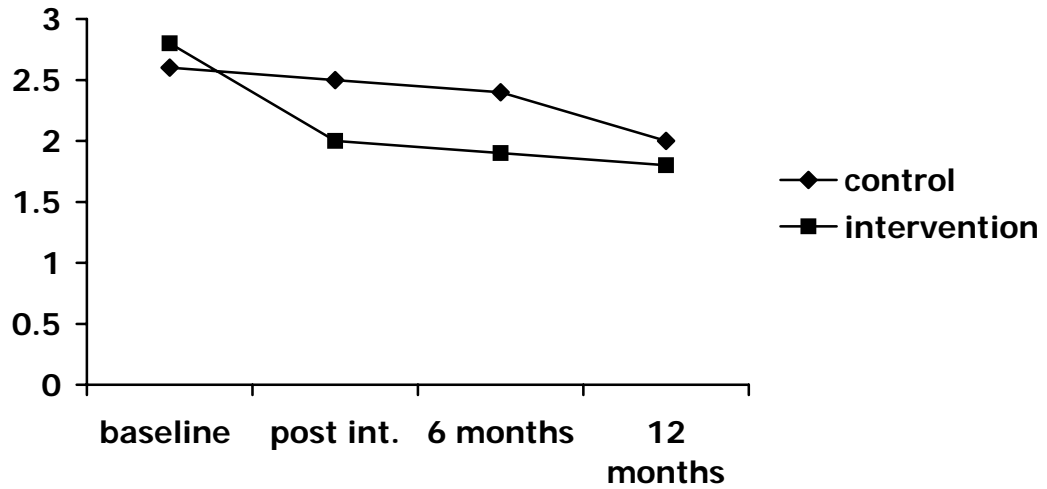
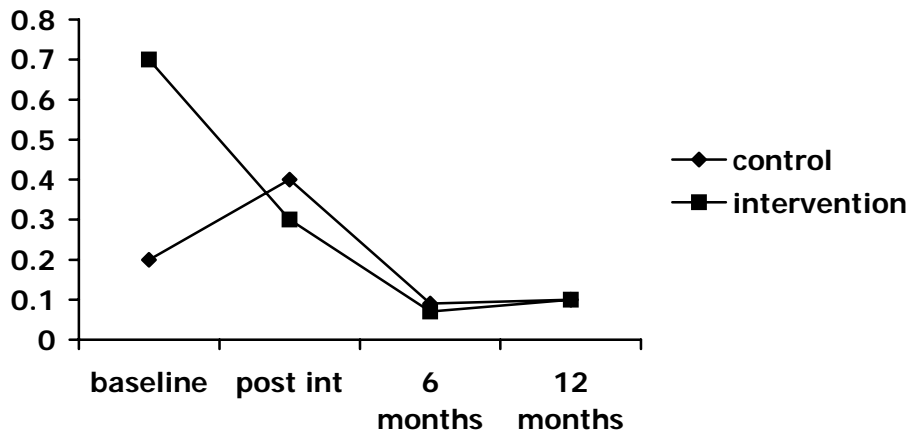


Figure 4

GHQ - depression scores at baseline, immediate follow up, 6-month post intervention and 12-month post intervention



References

- ¹ Royal College of Paediatrics and Child Health. Helpful Parenting. RCPCH, London 2002-08-15
- ² Brown J, Cohen P, Johnson JG, Salzinger S. A longitudinal analysis of risk factors for child maltreatment: findings of a 17 year prospective study of officially recorded and self reported child abuse and neglect. *Child Abuse Neglect* 1998;22:1065-1078
- ³ Hart B, Ridley TR. Meaningful differences in children's everyday lives. Brookes Publishing Co. Baltimore, USA 1995.
- ⁴ Stewart-Brown S. What causes social inequalities in health? *Critical Public Health* 2000; 10: 233-242
- ⁵ Patterson G. Coercive Family Process. Eugene, OR: Castalia, 1982
- ⁶ Fonagy P, Higgitt A. An attachment theory perspective on early influences on development and inequalities in health. In Osofsky J, Fitzgerald H. (eds) *WAIMH handbook of infant mental health*. vol 2 New York Wiley
- ⁷ Shonkoff JP, Phillips DA (eds). Committee on Integrating the Science of Early Child Development. Board on Youth Children and Families, National Research Council and Institute of Medicine. *From Neurons to Neighbourhoods. The Science of Early Child Development*. Washington:National Academy Press 2000
- ⁸ Rutter M. Resilience reconsidered: conceptual considerations, empirical findings, and policy implications. In Shonkoff JP, Meisels S. (eds) *Handbook of Early Child Intervention*. Cambridge, Cambridge University Press 2000
- ⁹ Barlow J, Stewart-Brown S. Behavior problems and group- based parent education programs *Developmental and Behavioral Pediatrics* 2000;21:356-370.
- ¹⁰ Barlow J, Coren E, Stewart-Brown S. Meta-analysis of the effectiveness of parenting programmes in improving maternal psychosocial health. *Brit J General Practice*. 2002;52:223-233.
- ¹¹ Marshall J, Watt P, Child Behaviour Problems: a literature review of its size, nature and preventive interventions. The Interagency Committee on Children's Futures. 189 Royal Street, East Perth, Western Australia 6004. 1999.
- ¹² Dimond C, and Hyde C. Parent education programmes for children's behaviour problems: medium to long term effectiveness. Department of Public Health and Epidemiology, West Midlands Development and Evaluation Service, University of Birmingham. Report no 19. interTASC no. 26/1999.
- ¹³ Scott S, Spender Q, Doolan M, Jacobs B, Aspland H. Multi-centre controlled trial of parenting groups for childhood antisocial behaviour in clinical practice. *BMJ* 2001;323:194-197.
- ¹⁴ Daly RM, Cornelius J H, Forrest A, Fellbaum GA. Temporal generalization of treatment effects over a three-year period of a parent training program. Directive parental counseling (DPC) *Can. J. Behav Sci.*1985;17:397-383.

-
- ¹⁵ Scott MJ, Stradling S. Evaluation of a group program for parents of problem children. *Behav. Psychother.* 1987;15:224-239.
- ¹⁶ Spaccarelli S, Colter S, Penman D. Problem solving skills training as a supplement to behavioural parent education. *Cognit. Ther Res.* 1992;16:1-18.
- ¹⁷ Pinsker M, Geoffrey K. Comparison of parent-effectiveness training and behavior modification parent training. *Fam. Rel.* 1981;30:61-68.
- ¹⁸ Barlow J, Parson J, Parenting programmes for children aged 0-3 yrs. The Cochrane Library 2002 (in press).
- ¹⁹ Coren E, Barlow J. Individual and group-based parenting programmes for teenage parents. The Cochrane Library 2001; Issue 4.
- ²⁰ Sutton C. Training parents to manage difficult children: a comparison of methods. *Behav. Psychother.* 1992;20:115-139.
- ²¹ Lawes G. Individual parent training implemented by nursery nurses: Evaluation of a programme for mothers of pre-school children. *Behav. Psychother.* 1992;20:239-256.
- ²² Webster-Stratton C, Hollingsworth T, Kolpacoff M. The long term effectiveness and clinical significance of three cost effective training programs for families with conduct-problem children. *J. Consult. Clin. Psychol.* 1989;57:550-553.
- ²³ Mullin E, Quigley K, Glanville BA. Controlled evaluation of the impact of a parent training program on child behavior and mothers' general well-being. *Couns. Psychol. Quart.* 1994;7:167-179.
- ²⁴ Webster-Stratton C. Long term follow up of families with young conduct – problem children: from pre-school to school grade. *J. Consult. Clin. Psychol.* 1990;19:144-149.
- ²⁵ Webster-Stratton C, Hancock L. Training for parents of young children with conduct problems: content methods and therapeutic processes. In: (Eds) JM Briesmeister, CE Schaefer. *Handbook of Parent Training*. 2nd Edition. New York, Wiley 1998.
- ²⁶ Patterson J, Barlow J, Stewart-Brown S, Mockford C, Klimes I and Pyper C. Improving mental health among children and their parents through parenting programmes in general practice: A randomised controlled trial. *Archives of Disease in Childhood* (In press)
- ²⁷ Robinson EA, Eyberg SM, Ross AW. The standardization of an inventory of child conduct problem behaviors. *J Clin. Child. Psychol.* 1980;9:22-29.
- ²⁸ Goodman R. A modified version of the Rutter parent questionnaire including extra items of children's strengths. A research note. *J Child. Psychol. and Psychiat.* 1994;35:1483-1494.
- ²⁹ Abidin R. Parenting Stress Index: a measure of the parent-child system. In C Zalaquett R Wood (Eds) *Evaluating Stress: A book of resources* (pp 277-291) Lanham MD USA: Scarecrow Press Inc. 1997.
- ³⁰ Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. *Psychological Medicine* 1979;9:139-145.

-
- ³¹ Rosenberg M. *Conceiving the Self* 1979 New York Basic Books.
- ³² Patterson J. Evaluation of a primary-care based parenting programme: A survey of need and demand, a randomised controlled trial of effectiveness, and a qualitative study of the impact of the programme MD Thesis University of Cambridge 2002.
- ³³ Mockford C, and Barlow J. Parenting Programmes: some unintended consequences. (forthcoming).
- ³⁴ Grimshaw R, McGuire C. Evaluating parenting programmes: a study of stakeholders views. 1998, London, National Children's Bureau
- ³⁵ Parent education and Support Forum (personal communication)
- ³⁶ Webster-Stratton C and Hammond M. What really happens in parent-training? *Behaviour Modification* 1993;17:407-456
- ³⁷ Ball M. *Never Too Early: an evaluation of methods of early years intervention*. Thames Valley Partnership. 2001
- ³⁸ Prochaska J, DiClemente C and Norcross J. In Search of How People Change Applications to Addictive Behaviours. *American Psychologist* September 1992 vol 47, no9, pp1102-1114
- ³⁹ *Velicer WF, Rossi JS, and Prochaska J. A Criterion Measurement Model for Health Behaviour Change. Addictive Behaviours 1996; 21:555-584.*