



Which type of parenting programme best improves child behaviour and reading? The Helping Children Achieve trial

**Celia Beckett, Jeni Beecham, Moira
Doolan, Tamsin Ford, Angeliki
Kallitsoglou, Stephen Scott & Kathy
Sylva, with the HCA study teams***

This research report was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

The team

Professor Stephen Scott, Director, National Academy for Parenting Research (NAPR), King's College London (Principal Investigator)

Professor Kathy Sylva, Department of Education, University of Oxford (Senior Investigator)

Dr Celia Beckett, Helping Children Achieve team, NAPR (Project Lead)

Dr Moira Doolan, NAPR (Lead Interventionist)

Dr Angeliki Kallitsoglou, Helping Children Achieve team, NAPR (Senior Researcher)

Professor Jeni Beecham, Professorial Research Fellow, London School of Economics (Economic evaluation lead)

Dr Tamsin Ford, the Peninsula Medical School, University of Exeter (Lead Researcher)

*Research teams:

London team: Sally Cartwright, Sean Harry, Alice Kember, Novelette Newell, Aba Oppon, Marilyn Polidaro, Claire Powell, Jordan Randell, Gesa Scharf, Milena Stateva, Steffi Waskewitz.

Exeter team: Louise Brownhill, Helen Eke, Lorraine Hansford, Leanne Gulvin, Alison Hurst, Andrena Lynes, Jacqueline Minton, Jesmond Zahra

Oxford team: Jenny Price, Fiona Roberts

LSE: Madeleine Stevens

Intervention teams:

London: Wendy Lanham, Marilyn De Freitas, Penelope Denny, Jane Dixon, Lorena Dolan Chandler, Nese Erkan, Minnie Ferguson, Arzum Gulsar, Wendy Harris, Tim Hooper, Heather Johnston, Karin MacKenzie, Cecilia Sabri, Mary-Anne Tandy

West Country: Angela Archer, Lorraine Bassett, Katie Brewster, Alan Ebben, Sue Ellen, Malcolm Fletcher, Judith King, Wayne Kirby, Jenny Price, Ali Richardson, Sue Roberts, Sally Stopporton, Hazel Thomas, Lucy Turner, Trish Williams

Acknowledgements

Special thanks go to Jordan Randell for working on the main dataset to Caitlin Stein, Cheryl Merriam, Jade Lowe and Ben Lucas for their contribution to the data. Our thanks also go to all the HCA parents and children who have generously provided invaluable information on their experiences. We would like to also acknowledge the Department for Education for funding the HCA Study.

Executive Summary

Aim

This study aimed to find out which type of parenting programme would best improve the social behaviour and reading ability of children who were at risk of poor outcomes due to antisocial behaviour

Background

Three factors that reliably predispose children to underachieve and become socially excluded in childhood with enduring effects into adulthood are (1) experiencing suboptimal parenting, (2) behaving disruptively and (3) being a poor reader. Early intervention in the form of parenting programmes delivered when children are in the early stages of school has the potential to help, however, it is not known whether it is better for programmes to help parents support their children's behaviour, reading, or both. The Helping Children Achieve (HCA) trial set out to answer this.

Methods

2655 families with children aged 5-7 in a disadvantaged inner London Borough and a South West city were screened or referred to assess levels of child disruptive behaviour. Slightly under half (1174, 44%) met the predetermined cut-off, reported by either parent or teacher, a third of these (398) expressed interest in a research trial, 215 eventually took part.

They were allocated to either a) a programme to improve behaviour and relationships (the Incredible Years, IY), or b) a programme to improve literacy (Supporting Parents on Kids Education in Schools, SPOKES), or c) both combined, or d) a telephone helpline (control condition).

Results

Attendance was good: four-fifths (78%) of the parents attended half or more of the sessions.

Immediately after the programmes parents in all three active interventions reported: increased confidence in how to deal with their child, that their child had fewer behaviour problems and that they perceived their reading had improved, compared to the control group.

Nine to eleven months after the start of the interventions, objective interviews confirmed that there was a substantial reduction in disruptive child behaviour for all three types of intervention compared to the control group.

Objective literacy tests showed a clear gain in reading for children whose parents were allocated the IY relationship programme compared to the control group, but no such reading advantage for children whose parents were allocated the SPOKES literacy programme.

In those allocated the IY relationship programme, positive parenting (encouragement and praise) increased and negative parenting (criticism, inconsistent discipline) reduced; neither parenting style was changed by the literacy or the combined programme, but the literacy and the combined programme both increased parents' use of reading strategies.

Conclusions

The trial confirmed that, when delivered with fidelity for families with children already exhibiting disruptive behaviour, evidence based-parenting programmes can improve the quality of the parent-child relationship, child behaviour, and also child reading ability – a novel finding. Wider dissemination of such programmes might help more children achieve their potential and might contribute to a reduction in social exclusion. The Helping Children Achieve trial showed that the majority of parents who enrol in parenting programmes that are skilfully-delivered will engage and attend regularly.

Acronyms used:

APQ	Alabama Parenting Questionnaire
ANCOVA	Analyses of covariance
ADHD	Attention Deficit and Hyperactivity Disorder
ASB	Anti-Social Behaviour
BAS	British Ability Scales word reading
BPVS	British Picture Vocabulary Scale
CP	Conduct Problems
DBS	Disruptive Behaviour Scale
DfE	Department for Education
DSM	Diagnostic and Statistics Manual of mental disorders.
HCA	Helping Children Achieve trial
IY	Incredible Years
MEB	Mental, Emotional and Behavioural
ODD	Oppositional Defiant Disorder
PACS	Parental Account of Child Symptoms interview
PPP	Pause Prompt Praise
SPOKES	Supporting Parents On Kids Education in Schools
SDQ	Strengths and Difficulties Questionnaire
SEG	Socio-Economic Group
SES	Socio-Economic Status
VAS	Visual Analogue Scale

Contents

	Page
The team	ii
Executive Summary	iii
Acronyms	iv
Content	v
1. Introduction	1
1.1 Overview of the report	1
1.2 Background	1
1.3 Why does it matter?	2
1.4 The need for early intervention	2
1.5 Design of the HCA Intervention	3
1.6 The HCA Trial	4
1.7 Aim of the study	5
1.8 Hypotheses	6
2. Method	7
2.1 Design	7
2.2 Recruitment Procedure	7
2.3 Inclusion criteria	8
2.4 Randomisation	8
2.5 Nature of the trial	9
2.6 Measures	9
2.7 Interventions	11
2.8 Analytic strategy	14
3. Recruitment	15
3.1 Routes into the trial	15
3.2 Recruitment by referral of individual children	16
3.3 Characteristics of the families recruited	17
3.4 Perceived reading ability and conduct disorder	17
4. Participation in the trial	18
4.1 Profile of families who consented to the study	18
4.2 Retaining families in the trial	20
5. RESULTS	23
5.1 Baseline data	23
5.2 Trial sample and attendance at the Intervention	30
5.3 Short term results	34
5.4 Results at post assessment	38
6. Discussion and conclusions	43
6.1 Substantive findings	43
6.2 Strengths and weaknesses of the study	45
6.3 Future research stemming from this study	46
6.4. Conclusion	46
References	47

1. Introduction

This report describes the Helping Children Achieve (HCA) study, a randomised control trial undertaken between February 2008 and March 2012 assessing the effectiveness of three different parenting programmes to reduce anti-social behaviour and improve reading, in primary school children living in an inner disadvantaged London Borough and a South West city.

The lessons from this trial should provide vital information on the relative effectiveness of different types of parenting programmes to reduce anti-social behaviour and improve literacy and the potential for rolling out the programmes more widely.

1.1 Overview of the report

1. Rationale for the study
2. Methods used
3. Recruitment strategies used
4. Characteristics of parents who engaged in the trial and those who did not
5. The results are in 4 sections:
 - 5.1 Baseline data
 - 5.2 Trial sample and attendance at the interventions
 - 5.3 Short term results with the parent perception measures
 - 5.4 Results at post assessment
6. Discussion, including in the context of the current debate of appropriate interventions for children with anti-social behaviour.

1.2 Background

Persistent anti-social behaviour in children (such as tantrums, defiance, lying, stealing and destructiveness) and poor reading ability are both factors that can lead to children having very poor life outcomes including elevated rates of criminality, drug misuse, violence, school failure, unemployment, depression and psychosis.

To avoid these bleak outcomes both anti-social behaviour and poor reading in children need to be tackled to put them back on track and grow up living happy and productive lives.

The children whose families are recruited into this study are at risk of anti-social behaviour as, at this early stage, they are displaying above average levels of conduct, disruptive or oppositional defiant problems as measured on the strengths and difficulties questionnaire (SDQ) the Diagnostic Statistics Manual (DSM) oppositional defiant scale or on the Parental Account of Child Symptoms interview disruptive behaviour scale (DBS).

1.3 Why does it matter?

Persistent antisocial behaviour in children is common: oppositional-defiant and conduct disorders (ODD/CD) affect 5% of the population (Fergusson, Horwood & Ridder, 2005). These children are seriously impaired: at home they are commonly criticised and have few friends, and at school they are disruptive and typically leave with no qualifications (ibid).

These negative traits carry on into adulthood - criminality, drug and alcohol misuse, and unemployment are common and the effects are big. The odds for these children ending up in these situations are approximately five times higher than for other children. Not only are there substantial personal costs to these individuals and their families, but there are also large public costs. The public cost of a high-risk youth over the lifetime has been estimated to be \$2.6-\$4.4 million (Cohen & Piquero, 2009). Children in England with conduct disorder cost society ten times as much as other children by the time they are 28 years of age (Scott, Knapp, Henderson & Maughan, 2001).

For these reasons, European and American governments have made tackling child antisocial behaviour a priority. For example, in Norway, Sweden and England there have been national initiatives rolling out evidence-based parenting programmes on a large scale (Scott, 2010). In the UK, the Allen review *Early Intervention: the Next Steps* (2011) recommends the wide scale implementation of evidence-based parenting programmes. The US National Academies of Science (2009) report on the prevention of mental, emotional and behavioural (MEB) disorders stated that:

“Research on the prevention of mental, emotional and behavioral disorders should focus on interventions that occur before the onset of disorder but should broaden the range of outcomes to include accomplishment of age-appropriate developmental tasks (e.g. school, social, and work outcomes).”

1.4 The need for early intervention

The need for innovative early interventions has arisen because current treatments for established antisocial behaviour are unsatisfactory.

- Even in well developed countries, only a minority of cases meeting criteria for oppositional-defiant and conduct disorders receive specialised help. For example, in England this is around a quarter (Ford, Hamilton, Goodman & Meltzer, 2005).
- Many of the specialist treatments offered are not grounded in empirically-based theory, but rather on general beliefs about psychotherapeutic counselling or medication.
- Many children and families only receive treatment in later childhood or adolescence. At these later stages outcomes are often poorer (National Academies, 2009).
- Treatments shown to work in the university clinics where they have originated typically are less effective in independent replications in ‘real-life’ practice (Weisz, Doss & Hawley, 2006).
- Most child mental health services are for clinically referred cases: there are relatively few routinely delivered prevention programmes.

For the above reasons there is a need to develop and test interventions that address these issues by offering a service early on in child development and for the whole population. This means that the interventions need to be primary or early interventions not later 'treatment' when the children are older and when the condition is more severe and entrenched.

For interventions to be as effective as possible, it is important that they draw upon modern scientific studies. These show that several different factors influence the emergence of antisocial behaviour. There are three risk factors that independently contribute to poor outcomes:

1. Hostile parenting (Loeber & Farrington, 2000);
2. Frequency and severity of conduct symptoms (ibid);
3. Poor reading ability (Trzesniewski, Moffitt, Caspi, Taylor & Maughan, 2006).

1.5 Design of the HCA Intervention

In planning the HCA intervention, we wanted to address all three risk factors through the single portal of parental behaviour. Although improving parenting to address antisocial behaviour and attention problems is well established, its potential to improve child reading is little tested.

We know that poor reading ability is much more common in families from disadvantaged backgrounds. In England, the recent Field review (2010) on *Poverty and Life Chances* noted:

'Children from poorer backgrounds perform worse cognitively and behaviourally than those from more affluent homes [whilst schools] do not effectively close that gap; children who arrive in the bottom range of ability tend to stay there.' (p.5)

This raises the question: what components lead to the socio-economic group (SEG) gap, and what can be done about it? The role of good parenting practices has been shown as very relevant, and in general, lower SEG is associated with less optimal parenting practices (Ghate & Hazel, 2002).

With regard to school attainment, several studies have found parental involvement was key. Sylva, Melhuish, Sammons, Siraj-Blatchford and Taggart (2010) found that the home learning environment was more powerful in predicting attainment scores at age 11 in English and mathematics than the parents' socio-economic group and that parental support for their children's learning (for example, reading to children, teaching them about sounds and letters) was a powerful predictor of school-readiness even after taking into account factors such as parental education, poverty, and home language.

These studies suggest that general parental involvement and a stimulating home environment influence attainment at school. The contribution of parents reading with their children on child reading attainment is less clear.

Bus, van Ijzendoorn & Pellegrini (1995) found that whether parents read with their children or not accounted for only 8% of the variance in literacy development. By contrast, in a multivariate analysis of the factors that account for the disparities in attainment seen in four year olds in the US, Waldfogel and Washbrook (2008) noted

that, after controlling for demographic factors including income and maternal education, *parental relating style* emerged as the single largest domain explaining the poorer cognitive performance of low-income children relative to middle-income children, accounting for 33% of the gap in language (4.4 points of the 13 percentile point gap).

In particular, maternal sensitivity and responsiveness accounted for over half of the effect on its own. A second important aspect was *parental support for learning*. This includes parents' teaching behaviours in the home as well as their provision of learning materials and activities, such as books. Taken together, parenting style and home-learning environment accounted for between a third and a half of the gaps between poor and middle income children. Given the findings on the associations between parental involvement and child reading cited above, it might seem "common sense" that promoting general parental involvement in reading would lead to better educational outcomes, however, there is little evidence to support this. For example, Mattingly, Prislin, McKenzie, Rodriguez & Kayzar (2002) reviewed 41 studies that evaluated parental involvement programmes. They found 'little empirical support for the widespread claim that parental involvement programmes are an effective means of improving student achievement or changing parent, teacher and student behaviour'. The review by Phillips, Norris & Anderson (2008) reconfirmed this finding, and cited evidence that the usual way parents read to their children was unlikely to be very effective because typically they point to the pictures, whereas if parents were to also carefully direct their children's attention to words in print, this would be more likely to be effective.

In summary, whilst the longitudinal studies confirm a strong association between parental involvement and child reading attainment, both the general quality of the parent-child relationship (e.g. sensitive responding) *and* the specific way the parent supports intellectual development and literacy seem to be important in promoting reading skills, though they do not emerge as major determinants in all studies (see Scott, Sylva, Beckett, Kallitsoglou, Doolan & Ford, 2012, for more detail).

1.6 The HCA Trial

We have seen above that there are many parenting programmes that tackle antisocial behaviour in children but there are very few that deal with poor reading ability. Longitudinal surveys show that the two issues need different aspects of parenting to tackle behaviour and reading ability. The more emotional qualities of the parent-child relationship such as calm discipline and warmth affect a child's behaviour, whereas parental involvement in supporting their child's literacy affects their reading ability.

To address the two issues an earlier trial combined two interventions: a parenting programme addressing relationships (Incredible Years, IY) with a new parenting programme addressing reading ability (Supporting Parents on Kids Education, SPOKES). This earlier trial found combining these two programmes improved both child behaviour and reading.

Because of these encouraging results, a new randomised controlled trial was designed to try and disentangle the mode of action of each component (parent-child relationship and reading) to see what the important elements were.

This new trial was the Helping Children Achieve Trial. To see which elements of the two interventions were having the greatest effect on children's outcomes, the research design was a four armed randomised control trial that set out to compare the effects of:

- **The Incredible Years (IY)**, which is designed to improve parenting, reduce child behavioural problems and improve child and parent relationships;
- **Supporting Parents with Kids' Education in School (SPOKES)**, which is designed to improve parents' ability to support child reading development and improve child literacy;
- Both programmes in combination **IY-SPOKES (COMBI)**;
- Service as usual/'**Signposting**,' which provides information to parents about services that are appropriate for concerns they raise about their child.

To address child behaviour, we chose the younger School Age Incredible Years programme (Webster-Stratton, 1998). This had proven effective in an earlier controlled trial with clinically referred antisocial children and had improved parenting, child antisocial behaviour, and child attending ability/ADHD symptoms (Scott, Spender, Doolan, Jacobs & Aspland, 2001; Scott, Sylva, Doolan, Price, Brian, Crook & Landau, 2010).

To address reading we wanted to produce a literacy programme for parents based on contemporary theory. We took the view that just encouraging parents to read with their children would not be effective enough. So the programme chosen (SPOKES) includes techniques for parents based on recent empirical evidence to encourage their children with their reading. This programme has been used in a previous trial (Sylva, Scott, Totsika, Ereky-Stevens & Crook, 2008) and has been found to significantly improve children's reading scores. Since then, it has been updated for this trial with additional strengthening in several domains, especially phonics.

1.7 Aim of the study

There were several aims:

- to test different parenting programmes for their effectiveness in improving three main risk factors that independently contribute to the emergence of social exclusion: hostile parenting; antisocial behaviour and poor reading ability;
- to select children at risk of poor outcomes due to elevated levels of anti-social behaviour;
- to use two recruitment strategies: a whole population approach with screening of all followed by selection of those in need, and also an indicated approach, whereby children could also be referred due to parental or teacher concern, to reduce the chance that any children were missed;
- to intervene early in their school career.

1.8 Hypotheses

1. Children of parents who attended the SPOKES literacy programmes will experience a significant enhancement of their reading ability.
2. Children of parents who attended the IY relationship programmes will demonstrate a significant improvement in their behaviour.
3. Parents who attended the IY relationship programmes will show increased use of positive parenting techniques and decreased use of less desirable parenting strategies.
4. Parents who attend both interventions will experience improvements in both their children's literacy and behaviour.

Summary

- Child anti-social behaviour and poor reading are both major risk factors for a range of poor outcomes and predict social inequality
- Several government reviews agree that Early Intervention is needed to reduce overall levels of risk, especially parenting programmes
- To be effective intervention needs to start early
- Early interventions need to be empirically tested
- There is very limited evidence so far in the world about how best parents can support their children to reduce the risk of child anti-social behaviour and poor reading

2. Method

2.1 Design

The HCA trial had four stages:

- At stage one, children in reception, year one, or year two were screened or referred for anti-social behaviour by parents and teachers who completed a brief questionnaire, described below. Children whose scores on this questionnaire showed elevated levels of anti-social behaviour were then assessed for eligibility by an interview with the parent.
- At stage two, families who met the eligibility criteria and said they were interested in taking part in the study were assessed on a range of detailed measures. Then they were randomly assigned to the four intervention and control groups: Incredible Years (IY); Supporting Parent's in Kid's Education (SPOKES); IY-SPOKES (COMBI); Signposting (Control).
- At stage three, brief measures to monitor progress and see which aspects of parenting and child behaviour were beginning to change (mediators) were assessed 12 weeks after the start of the intervention.
- At stage four, recruited families were assessed in detail again, 9-11 months after the first assessment, to assess whether there is a sustained improvement in outcomes.

2.2 Recruitment Procedure

The HCA study has been conducted in two contrasting local authorities: an inner London authority and a South West city. The inner London authority was the most socio-economically deprived borough in England (Communities and Local Government, 2008). The London authority also had a very diverse ethnic population with 52% from ethnic minorities. In contrast, 96% of the population of the South West city was White British, which was ranked 84th out of 152 local authorities for deprivation in the 2001 census.

For full details of the recruitment process and challenges to recruitment see Stateva, Minton, Beckett, Doolan, Ford, Kallitsoglou, Scott & the HCA teams (in press) and Beckett, Kallitsoglou, Doolan, Ford, Sylva, Scott & the HCA study teams (2010).

Recruitment was conducted in two ways: first by a population based screen in schools and secondly by seeking referrals from interested parents and teachers. Generally it was the mother, who completed the questionnaire, the assessments and attended the programme, but sometimes both parents attended or if the father was the main carer he completed the assessment.

Written consent was obtained from parents, and child assent from children, after obtaining permission to conduct the project from the King's College London research ethics committee. The trial is registered as a clinical trial (Clinical trials registration: ISRCTN53662728) and will be reported according to the guidelines of the Consolidated Standards of Reporting Trials (CONSORT; Moher, Schulz & Altman, for the CONSORT Group, 2001).

2.3 Inclusion criteria

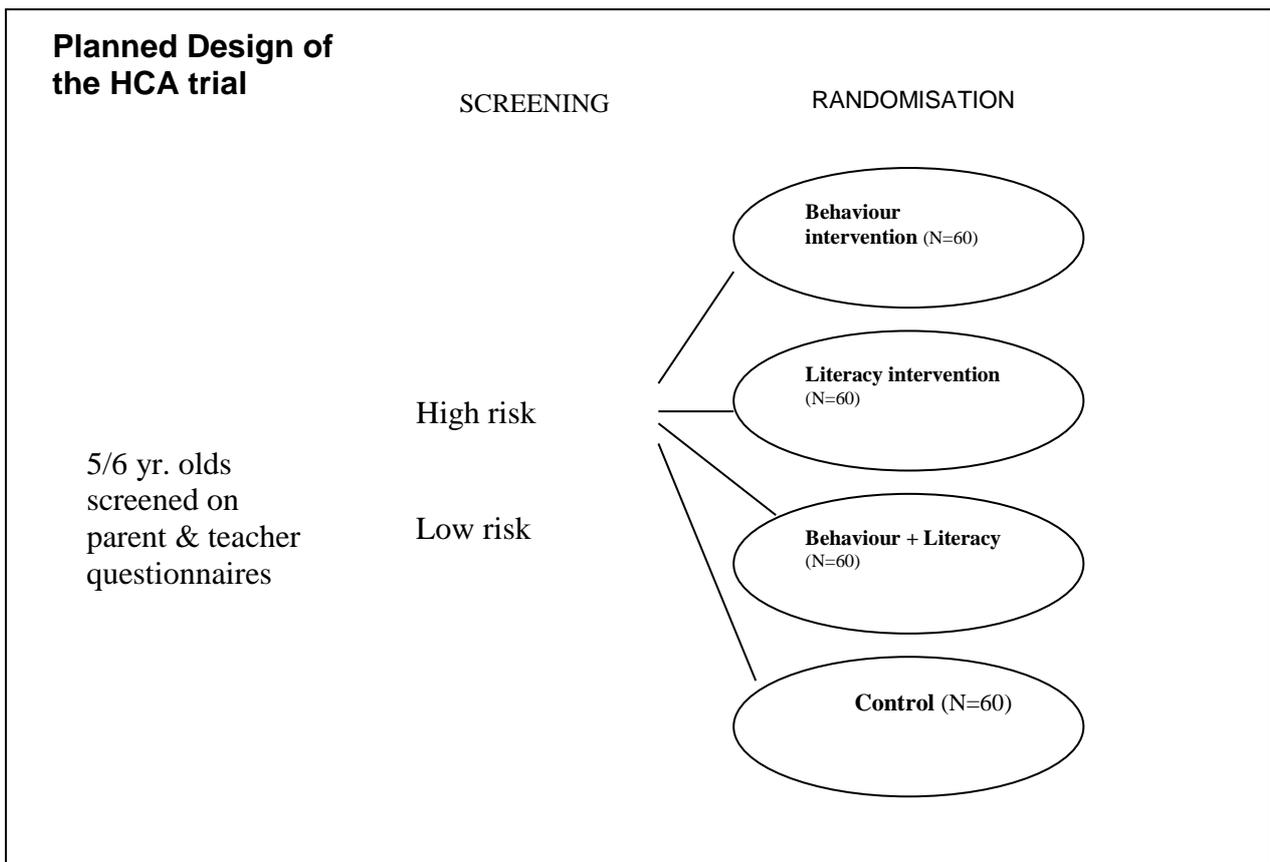
Participants were eligible to take part based on the following criteria:

- 1) Children met the screen cut-off: based on either the conduct problems scale on the Strengths and Difficulties Questionnaire (SDQ) or the Diagnostic Statistics Manual (DSM) oppositional defiant scale, see below for further details.
- 2) Parent's ability to speak functional English
- 3) Interest in taking part in the study
- 4) Child score equal or above 0.7 on the Parent Account of Child Symptoms, Disruptive Behaviour scale, see below for further details.
- 5) Child free of global developmental delay.
- 6) Child score equal or above 70 on the British Picture Vocabulary Scale, a test related to general cognitive ability (Dunn, Dunn, Whetton & Burley, 1997).

2.4 Randomisation

Participants recruited were randomised to one of the four interventions by an independent statistician and the researchers were blind to the randomisation. The design is shown in figure 2.1 below.

Figure 2.1 Design of the Helping Children Achieve trial



2.5 Nature of the trial

The trial is testing the effectiveness of the interventions so only subjects who have attended the intervention on at least one occasion are considered to be 'in the trial'. It is not an intention to treat trial.

2.6 Measures

The measures collected in the study were collected over the four stages of the study and consisted of a mixture of questionnaires, interviews, assessments and observations carried out in the child's home or in the schools. The staff were extensively trained in the administration of the measures in the trial by experts from the Institute of Psychiatry and the University of Oxford.

2.6.1 Measures used in the screen

Strengths and difficulties questionnaire (SDQ) conduct problem scale (SDQ; Goodman, 2001). Conduct problems: disobedience, lying, fighting, stealing and temper were scored on a scale of 0-2 from no problem to a frequent problem.

Pro-social, and peer relation subscales were also completed by parents and teachers for screening purposes.

DSM IV Oppositional Defiant Scale. Questions related to the diagnostic criteria for Oppositional Defiant Disorder according to DSM IV (American Psychiatric Association, 1994). The eight questions include anger, losing temper, arguing, deliberately annoying others, refusing to comply, spiteful and vindictive behaviour, blaming others and being argumentative and are scored on a 0-2 scale, from no problem to a frequent problem.

Educational special needs. The parents were asked in the screen whether the child had any special educational needs and what help they were getting for them. This was categorised as a dichotomous variable of those in receipt of extra help or not. This measure was used as a covariate of outcomes.

Parent and Teacher Reported Child Reading Ability. As part of the screen parents and teachers were asked to report on reading ability on a scale of 1 (cannot read yet) to 6 (reads very well). These questions were repeated at the mediator stage 12 weeks after the intervention.

2.6.2 Primary Outcome measures

The two primary outcomes measures in this trial were: the child's level of anti-social behaviour as measured on the Parental Account of Child Symptoms (PACS) and the child's reading ability measured on the British Ability Scales.

PACS The Parental Account of Child Symptoms interview (PACS; Taylor, Sandberg, Thorley & Giles, 1991) is a semi-structured interview which is researcher rated. The measure was used to assess the severity and frequency of the child's disruptive behaviour through assessing detailed accounts of several common situations. The PACS is a well validated measure and predicts later poor outcomes. The questions include stealing, lying, tantrums, refusal to go to bed, rudeness, destructiveness and

aggression, features of antisocial behaviour in children of this age. Such behaviours in childhood predict the development of more serious antisocial behaviours in a substantial proportion of adolescents.

The 8 items are each rated for severity (0-3) and frequency (0-3) on a 4-point scale. The mean score of all 8 items is computed to yield the total Disruptive Behaviour Score. A mean score of $\geq .7$ was used as a final cut-off point for entry in to the study; this score is equal to the mean level of conduct problems reported in an inner-city school population on the basis of the PACS DB scale (see Kallitsoglou, Beckett, Ford, Doolan, Sylva, Scott, & the HCA teams 2011 for more details on the measures)

The PACS measure was also used to assess the parent's detailed account of the severity and frequency of the child's restless and inattention (ADHD symptoms). The ADHD scores were examined as potential co-variants in the outcomes.

BAS Word Reading from the British Ability Scales (BAS; Elliot, Smith & McCulloch, 1996) is an individually administered standardized test of the child's ability to read single words.

2.6.3 Socio-demographic data

Measures of the families' socio-demographic characteristics were collected using a semi-structured interview used in a previous trial conducted by this team (Scott, Sylva et al., 2010) which included details of the family structure, occupation (used to assess the socio economic status) and whether the child receives free school meals.

Socio-Economic Status. Details of parents' employment was assessed using the National Statistics Socio-Economic Classification (analytic class) (Office for National Statistics, 2005). The resulting data was categorised into four groups as there was an uneven distribution amongst the sample with a higher proportion of SES VIII. The four final groups were I- II: managerial or professional; III-V: intermediate, small employers, supervisory; V-VII: lower routine, technical and routine posts; VIII: never worked or unemployed.

Parental education. This data was collected at interview and covered the mother's educational qualifications, categorised into three groups where 1 = "educated to 16yrs, 2 = "educated to 18+/secretarial/technical qualification and 3 = "educated to degree level or professional or teacher training or degree not finished".

Ethnicity. Parents were also asked for details of their ethnicity based on the ONS categories (Office for National Statistics, 2002). The original 16 point distribution was reduced to a 2 point scale of White British or ethnic minority due to small number of individual ethnic groups.

2.6.4 Measures of Parenting

Reading time and strategies interview (Sylva et al., 2008) this measure provides an indication of the time the parent spends with the child reading and the strategies that they use to create the right environment and to help the child with any difficulties. The overall time was worked out from the number of times a week the parent spent with the child reading multiplied by the minutes spent. The different strategies for enabling a positive atmosphere and appropriate support for reading were summed from the five questions each scored 0-2.

Alabama Parenting Questionnaire (Shelton, Frick & Wootton, 1996) is a self-report of parenting practices, measuring parental involvement, positive parenting, monitoring and supervision, consistency of discipline, corporal punishment and other discipline practices completed by parents at the pre and post assessment stages as well as at the mediator stage (12 weeks after the start of the intervention). The scale was summed into two sub-scales, reflecting positive and negative parenting behaviour.

Parents' view of the study. Twelve weeks after the intervention the parents were asked for their views of the trial, their confidence in managing the child's behaviour now and in the future and any changes they saw in the child's behaviour and reading ability. Parents are asked to show on six-point scale (1=very unconfident to 6=very confident) how confident they felt in managing their child's behaviour.

2.6.5 Secondary Measures of outcome

A number of secondary outcome measures were collected to assess the effectiveness of the trial.

Visual Analogue Scale (Aitken, 1969) provides the opportunity for parents to report the nature and intensity of their child's difficulties that is concerning them most on a 10 cm scale and for this to be compared at later time points for the same problem. It was administered by questionnaire at the pre-assessment, 12 weeks after the intervention and at the post assessment.

The Eyberg Child Behaviour Inventory (Boggs, Eyberg & Reynolds, 1990) consists of 36 items designed to assess parent-reported conduct problems, and measures the frequency with which problems occur (Intensity Score) as well as the number of problems. This questionnaire has very well established validity. This measure was collected at the pre and post assessment stage of the trial.

2.7 Interventions

The interventions offered were:

- a) a literacy-based intervention programme that helps parents support their child's reading;
- b) a well-established parent-child relationship programme that targets behaviour;
- c) a combination of both these two programmes;
- d) a signposting service that provides parents with information about where to get help (control group).

Participating families were randomly assigned to one of these four programmes.

2.7.1 Literacy-Based Intervention Parenting Programme

The SPOKES literacy programme is a manualised programme originally devised by Professor Kathy Sylva, Ms Carolyn Crook, Dr Jenny Price and Professor Stephen Scott (Sylva & Crook, 2000). It combines the Pause Prompt Praise (PPP; McNaughton, Glynn & Robinson, 1987) approach to reading with a 'whole language' approach focusing on meaning (e.g., 'talking around the book' and language 'play' with words). In PPP, parents are trained to provide one-to-one reading support to their school-age children and its effectiveness has been replicated in many countries (Merrett, 1998). PPP gives parents techniques to encourage their children's use of an active problem-solving approach to reading. The programme has been updated by Professor Kathy Sylva and

colleagues (Sylva, Price, Crook & Roberts, 2010; Sylva, Roberts, Price, Dolan, Beckett & Scott, 2011) to form a literacy programme based on recent empirical evidence, including systematic phonics work. It lasts for ten, two-hour sessions, including a home visit and a family literacy workshop. Parents who are not enrolled in the combined IY/SPOKES programme are given an additional two sessions on how to help their child to concentrate and not be oppositional during shared reading. This programme was implemented in combination with the Incredible Years programme in a previous trial and was found to significantly improve children's reading scores (Sylva et al., 2008).

For the SPOKES Literacy Programme, supervision was offered by the programme developer, Professor Kathy Sylva, who is a reading support specialist, to ensure quality and fidelity.

2.7.2 Parent-child relationship Programme

The Incredible Years Parent Group programme (Webster-Stratton, 1989; Webster-Stratton, Reid & Hammond, 2001) aims to help parents build better relationships with their children and develop skills to manage difficult child behaviour effectively, using social learning, and cognitive, behavioural and systemic principles. It has a strong evidence base for improving child outcomes and parenting, and has been shown to create strong, positive relationships with families, paying particular attention to parents' emotional needs.

The programme is respectful of parents' own culture and beliefs, and adopts a collaborative rather than instructive approach. It has been shown to be popular with parents from diverse cultures and to have low drop-out rates in real-life conditions (Scott, Sylva et al., 2010). DVD vignettes are shown to parents in small groups; scenes depict parents sometimes behaving in a way that leads to the child being calm and obedient and at other times in a way that leads the child to misbehave and have tantrums.

The first six weeks concentrate on how to build positive relationships and promote desirable child behaviour and constructive activity through play, praise and rewards. The play element focuses on sensitive response to the child and parental approval of child on-task behaviour. The second six weeks focus on handling misbehaviour, including ignoring minor misbehaviour, establishing positive routines, applying consequences, and using 'time-out'. Through detailed group discussion, parental behaviour that leads to better child behaviour is drawn out. Parents practise the new techniques in role-play of their own situations. They are set tasks, encouraged to practise the new skills at home and they are telephoned mid-week to encourage progress and resolve any difficulties they may have. The intervention lasts 12 weeks and each session is two hours.

All group leaders were trained in the IY basic programme by an accredited IY mentor or trainer. Parent group sessions were filmed so that practitioners could examine their group leadership skills. Group leaders received weekly supervision, in groups, offered by an accredited IY mentor or trainer. In addition, group leaders were offered some individual coaching in the programme.

In supervision, group leaders practised delivery of programme elements, for example rehearsing use of DVDs, standard parent role plays and introducing programme topics.

In addition, they routinely brought DVDs of parent group for review, where challenges were identified and solutions were discussed and rehearsed through role play.

Group leaders used standardised programme materials, including manuals giving protocols for each group session, DVDs of vignettes shown to parents and standard hand-outs. All parents were given a copy of the *Incredible Years* book or audio book, in addition to hand-outs. After each session, group leaders completed self-monitoring checklists to assist them in reviewing their own practice. They also used these check lists to help identify areas for review in supervision.

Group leaders can seek to obtain accreditation in the Incredible Years programme. This requires them to submit DVDs of whole sessions for review. Throughout the study, group leaders were encouraged to seek accreditation and nine group leaders submitted tapes for review. Of these, four had tapes accepted for accreditation and of these, three were fully accredited as group leaders. In addition, one senior group leader achieved status as a Mentor in the Incredible Years programme.

http://www.incredibleyears.com/Certification/process_GL.asp

2.7.3 Combined Programme

Families allocated to the combined programme were offered the Incredible Years programme followed by the SPOKES literacy programme; the total number of sessions offered was 22.

2.7.4 Signposting and Information service

The comparison group participated in a Signposting and Information service. Parents were provided with a telephone helpline, which identified appropriate services for parents' concerns about their child and informed them about how to access these services. Evidence supports the efficacy of such less intensive, information based interventions (e.g., Sanders, Markie-Dadds, Tully & Bor, 2000; Sanders, Montgomery & Brechman-Toussaint, 2000; Sutton, 1992).

2.7.5 Engagement

For all three intensive programmes, parents were invited to attend a group (parents of fifteen children as a maximum) run by two group leaders for two hours per week. All of the parent programmes adopt an active outreach approach in order to try to engage families who may be hard to reach because they are burdened with mental health, relationship or socioeconomic difficulties. Group leaders made contact with parents prior to groups starting, through phone calls and/or home visits. The programmes were delivered in community facilities, close to local schools or in the schools themselves. Crèche facilities and transport were provided, if needed. Close contact was maintained with parents to help them work on strategies through midweek phone calls. Group leaders texted or phoned parents on group mornings if they needed extra support. If parents failed to attend or were experiencing difficulties, home visits were made to problem solve or practise specific strategies.

2.7.6 Programme fidelity

Practitioners who take part in any of the parent programmes in the study are trained to a high standard in the intensive programmes, over at least a two-term period. Fidelity to evidence-based models has been shown to be essential to achieve good outcomes for parents and children. The Incredible Years and SPOKES programmes included a range of elements to ensure fidelity.

2.8 Analytic strategy

All main results were analysed on the basis of the participants involvement in the trial, i.e. only on those who attended at least one session of the programmes. The rationale is that this trial is testing the effectiveness of the interventions rather than testing the overall effect for all those who originally opted to take part in the trial but then did not start.

Tests were made to assess the representativeness of those who did continue with the trial in comparison with the wider group recruited to establish whether there is any bias in terms of the socio-demographics or the behavioural difficulties of the group who elected to continue.

Analyses were all conducted in SPSS and involved the use of General Linear Model repeated measures and the calculation of effects sizes to assess the differences in outcomes between the respective groups.

The power calculation was based on two groups of 60 (i.e. 120 cases: Combi + Lit for judging the basic effectiveness of the literacy; Combi + IY for the behavioural) vs. 60 controls; from previous literature, we expected an effect size of 0.5 SD.

Summary

- The HCA study is a four armed randomised control trial that was conducted over four stages to test the effectiveness of interventions to reduce levels of anti-social behaviour and improve the literacy of children at risk of poor outcomes.
- The study employed a mixture of standardised measures: questionnaires, interviews, assessments and observational measures to assess the children's behaviour and compared this before and after the interventions.
- The interventions employed were the Incredible Years parent-child relationship programme and the SPOKES literacy programme, tested as separate interventions and in combination, compared with a signposting parents to services as usual (control group).

3. Recruitment

Full details of recruitment are included in the previous reports and paper (Beckett et al., 2010 and Stateva et al. in press). Children were recruited from 67 schools: 11 in the inner London authority and 56 in the South West city as reported in chart 3.1.

3.1 Routes into the trial

Families were recruited through two main routes either from a) the large scale population screen (proceeding to further assessment n= 296; with 162 (54%) eventually in the trial) or b) through individual referrals by parents, teachers or professionals or either by parents directly responding to advertisements or through the encouragement of schools (n = 99, with n= 53, 52% in the trial).

The total pool of children for whom we had questionnaires was 3675 of whom parent questionnaires were available for 2665 see chart 3.1 for further details; the remainder only had teacher questionnaires. Of these 1170 (44%) were at risk and had a parent questionnaire and 395 (34%) consented to take part. This figure was based on meeting the cut-off for either of the two individual measures: the DSM IV oppositional defiant scale and/ or the Strengths and Difficulties Conduct Problem scale and from either reporter. As table 3.1 demonstrates, children were more likely to be eligible from parent reports. The cells in bold show the children who were eligible from either route or reporter.

Table 3.1 Identifying children at risk

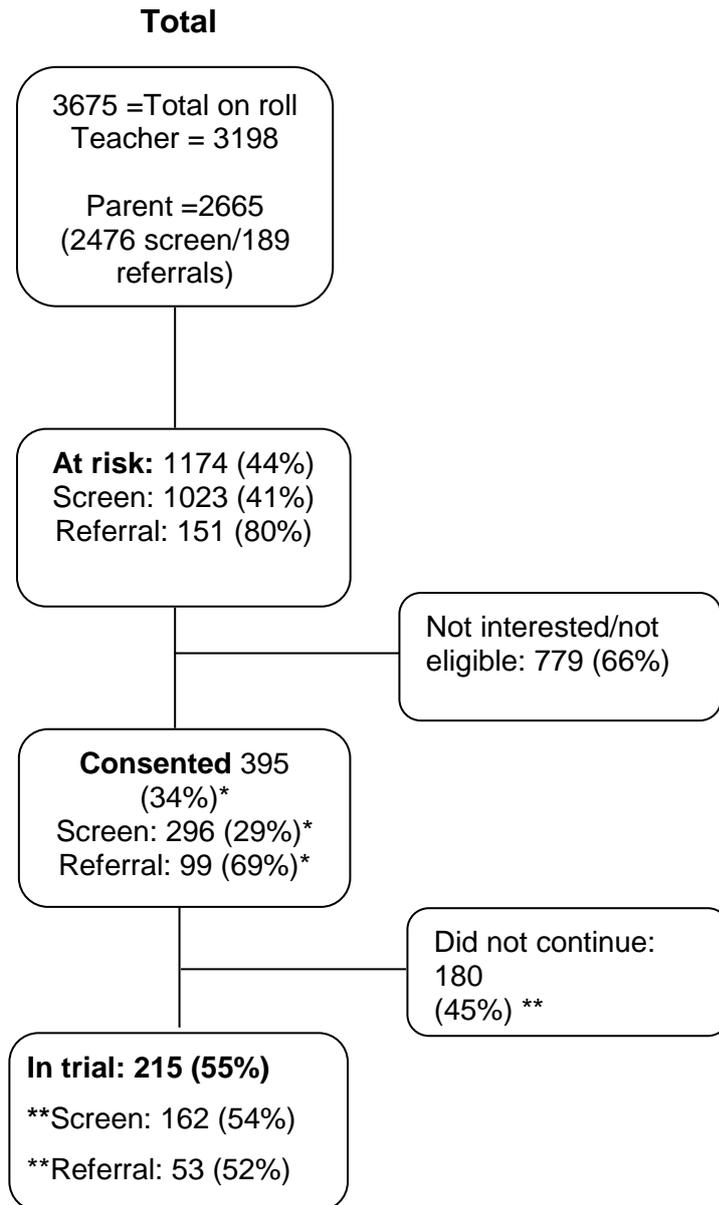
Parent reports	DSM ODD scale \geq 5	DSM ODD scale $<$ 5
SDQ CP scale \geq 3	22%	5%
SDQ CP scale $<$ 3	12%	61%
Teacher reports	DSM ODD scale \geq 5	DSM ODD scale $<$ 5
SDQ CP scale \geq 3	10%	3%
SDQ CP scale $<$ 3	3%	84%
Combined teacher or parent	Met cut-off parent	Did not meet cut-off parent
Cut off teacher	10%	6%
Not cut off teacher	28%	56%

Screen. Although 1023 (41%) met the criteria on the screen not all were eligible on further assessment for the trial and only 299 (29%) of those at risk consented to take part. This is quite a good rate for a preventive intervention trial, where parents do not start off seeking help and the procedures are time-consuming. Of those who completed the parent questionnaire (366) 27% indicated that they would not be interested in taking part: reasons given were: not interested, 20%; because they worked, 42% and because they had other commitments, 38%. The remainder gave no reason.

3.2 Recruitment by referral of individual children

In addition to recruitment to the trial from the population screen, families were also recruited to the study by referrals (99 families proceeding to further assessment: 35 in the inner London authority and 64 in the South West city; 53 eventually in trial), see flow chart 3.1 for details. The consent rate for those who were referred was much higher than for those who came from the screen.

Chart 3.1 Participant flow from received parent questionnaires



* of at risk ** of consented cases

3.3 Characteristics of the families recruited

There was limited information available from the screen on socio-demographic factors: gender and ethnicity and whether English was spoken at home.

Gender. There were slightly more boys in the population screened 52% vs. 48% girls. Conduct problems reported on the SDQ were significantly higher amongst boys in both sites according to teachers ($t(2068) = 8.72, p < .001$) and parents ($t(2635) = 4.57, p < .001$). Reports of reading ability were lower for boys according to teachers ($t(2015) = 3.19, p < .001$) and parent reports ($t(2183) = 4.30, p < .001$). On both key measures boys were at greater disadvantage than girls.

Ethnicity/ language. In comparison with the inner London authority as a whole (where 52% of the population are from ethnic minorities) in this sample 75% children were from an ethnic minority background in the population screened. There was very limited variation in ethnicity in the South West city, with more than 96% of the sample reporting to be White British. For a sizeable minority of the screened sample in the inner London authority (27%), English was not the language that was spoken at home.

3.4 Perceived reading ability and conduct disorder

Those who had higher levels of conduct problems were also significantly more likely to have lower reading ability according to both parents ($t(2205) = 4.89, p < .001$) and teachers ($t(2032) = 4.43, p < .001$). This is an important finding as it confirms: (1) that risk factors for poor outcomes tend to co-occur and (2) these children may need the kinds of intervention offered in the trial that address both behaviour and reading.

Summary

- The study demonstrates that it is possible to conduct population screens in very deprived, multi-ethnic areas and to get high rates of return. To our knowledge, this is one of the largest surveys of primary school age children's behaviour problems in inner-city areas in the UK and had a response rate of 88% from teachers and 70% from parents.
- The relatively low level (one third) of parents of high need children who were interested and eligible to take part (i.e. available on the days interventions were being held, speaking workable English) is notable. For parenting programmes to be effective at a whole community level in improving outcomes for children, it is important that these issues of access are understood, so that as high a proportion as possible can enrol and attend.
- As would be predicted from the epidemiology literature, boys showed greater levels of problems. There was also an association between behaviour problems and reading difficulties as has been reported by others (Hinshaw, 1992). This shows that screening on behaviour alone also detects those with multiple (i.e. behaviour and reading) risks. Although reports of reading ability were obtained from the screening questionnaire, difficulty in reading was not a criterion for inclusion into the trial.

4. Participation in the trial

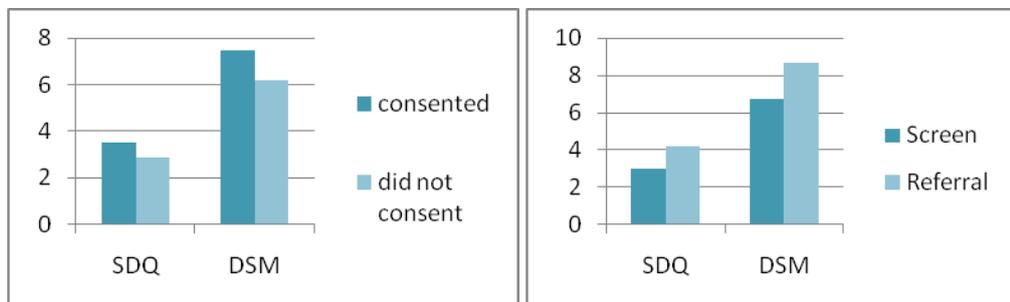
4.1 Profile of families who consented to the study

In this chapter, we examine in more detail the 395 families who consented to the study, including those who did not continue. All families who met criteria for the study were invited to participate (see chart 3.1 above for details). 92% of respondents were mothers.

The 395 children whose families consented to the study had greater levels of difficulty, as rated by parents, than those who chose not to take part on both the Strengths and Difficulties conduct problems scale (SDQ CP) and the DSM Oppositional Defiant scale (DSM IV ODD scale): SDQ scale ($t(1167) = 5.45, p < .001$); DSM ODD scale ($t(1102) = 6.00, p < .001$) as shown in figure 4.1.

Of the 395 families who consented to take part there were some differences according to the mode of recruitment with families who were referred or who referred themselves having a significantly higher level of difficulty in their behaviour than those who were recruited through the screen: SDQ, CP scale ($t(366) = -4.90, p < .001$); DSM ODD scale ($t(359) = -4.75, p < .001$) as shown in figure 4.1.

Figure 4.1 Comparison of SDQ CP scales and DSMIV ODD scales according to whether consented to take part or not and type of recruitment



As can be seen in table 4.1 in both the London site and the South West site, the participants in the HCA trial had a higher proportion of social disadvantage on every index than the local population. Study participants were more likely to receive free school meals, be in lone parent households, and be long term unemployed than the general population. The London site also had a higher proportion of families from ethnic minorities than the South West site. This data was taken from the 325 participants who completed the assessment.

Table 4.1 Socio-demographic profile of the participants in the HCA trial

National Average			Census information authority	HCA consented cases for
Free School Meals	17%	London site	33%	41%
		South West site	16%	34%
Single Parents	25%	London site	33%	42%
		South West site	26%	31%
Ethnic Minorities	27%	London site	52%	75%
		South West site	3%	5%
Special Educational Needs	21%	London site	Not available	27%
		South West site	Not available	23%
SES (long term unemployed)	16%	London site	21%	34%
		South West site	14%	26%

Figure 4.2 shows the socio economic status of the sample in the two authorities compared to the census information. In both sites there is a cross section of participants but also a high proportion of most disadvantaged i.e. the long term unemployed.

Figure 4.2 Socio-Economic Classification: Comparison of Site A and B populations (2001 Census) with participating HCA households at the two sites



* Not Classified includes Full Time Students, for the HCA participants it also includes missing data. These are figures from HCA trial based on highest classified parent/guardian within each household. Employment status is given as at time of survey. The National census figures are based on all people resident in households where the Household Reference Person is under pensionable age by NS-SeC of the Household Reference Person

4.2 Retaining families in the trial

4.2.1 Eligibility. When assessed a further 24 families (6%) were not eligible according to the more detailed trial criteria.

4.2.2 Engaging and retaining families in the trial. Researchers worked hard to engage parents in the trial with home visits to discuss and explain the trial. Despite this 39% of families who consented to the study (156 of the 395 families) either did not complete the pre-assessment n= 70 (17%) or decided not to continue prior to the intervention n=29 (7%) or did not attend the intervention, n=60 (15%) see chart 3.1.

This was generally because of a change in circumstances e.g. the child's behaviour improved, or a change in the family situation i.e. bereavement, family illness etc., or changes in working pattern that meant that they were no longer available. For more detail of reasons for difficulties in engagement see Stateva et al., (in press).

4.2.3 Did the families who remained in the study differ from the families who did not continue? As can be seen in table 4.2, there is remarkably little difference in the characteristics of those who stayed in and those who did not continue in the trial in terms of the mode of recruitment, gender, the percentage of ethnic minorities, special educational needs, levels of behavioural difficulties and the reading ability of the child; this was true for recruits from the screen as well as the referral route. The children whose families had referred themselves and then did not continue however, were significantly more pro-social than those who stayed in ($t(87) = 4.14$ $p < .001$) but this was the only factor that was associated with non-engagement. This makes us confident that those who participated were to a large extent representative of the larger number who consented.

Although there were similar proportions of either gender who did not continue, there were nevertheless slightly more boys than girls in the trial (54% vs. 46%) reflecting the higher proportion of boys in the population who have conduct problems relative to girls.

Table 4. 2 Comparison of those who engaged in the trial or not

	<u>Screen</u>			<u>Referral</u>		
	In trial	Did not continue		In trial	Did not continue	
All consented cases excluding ineligible n= 371	(161)	(117)	$\chi^2(1)=$	(53)	(38)	$\chi^2(1)=$
	% M (SD)	% M (SD)		% M (SD)	% M (SD)	
Gender of child						
Girls	46%	44%	.11, $p=.74$	40%	35%	.19, $p=.67$
Boys	54%	56%		60%	65%	
Ethnic Minorities	20%	20%	.01, $p=.92$	32%	25%	.52, $p=.47$
Special Education Needs	23%	24%	.04, $p=.85$	27%	28%	.01, $p=.92$
			t			t
SDQ conduct problems parent report mean score	3.15 (1.69)	3.12 (1.70)	(276) = -.14, $p=.82$	4.27 (1.82)	4.05 (1.93)	(87) = .54, $p=.59$
DSM ODD parent report Mean score	7.01 (3.28)	6.40 (3.32)	(270) = -1.50, $p=.14$	8.96 (3.60)	8.44 (3.64)	(86) = -.66, $p=.51$
SDQ peer problems parent report mean score	2.22 (2.03)	1.92 (1.69)	(276) = 1.28, $p=.17$	2.58 (1.92)	2.16 (1.85)	(87) = 1.02, $p=.31$
SDQ pro-social behaviour¹ parent report mean score	7.44 (1.86)	7.52 (1.90)	(276) = .35, $p=.72$	6.27 (1.89)	7.84 (1.58)**	(87) = 4.14, $p < .001$***
Parent report of reading ability	3.89 (1.47)	3.83 (1.56)	(246) = -.31, $p=.76$	4.02 (1.48)	4.06 (1.54)	(77) = .11, $p=.91$

* $p < .05$ ** $p < .01$ *** $p < .001$ ¹ pro social behaviour is a positive score

Summary

- Those who consented to take part in the trial from the screen had higher levels of behavioural difficulties than those who did not engage; therefore the study successfully involved children with substantive problems and did not select children with low or negligible problems.
- The proportion of lower SES, single parent families, those in receipt of free schools meals engaging in the two sites was higher than the population averages. In the London site the proportion of ethnic minorities was higher than in the population.
- Interventions attract a wide range of participants representative of the neighbourhood in which they attend school.
- The families who stayed committed to the interventions did not differ from those who withdrew from the study in terms of the child's behaviour, with the exception of the pro-social behaviour which was higher in those who withdrew amongst those who were referred.

5. RESULTS

The results are divided into 4 sections

5.1 The baseline data

5.2 The interventions

5.3 Interim findings

5.4 Findings at post assessment

5.1 Baseline Data

This section explores the data collected on the trial sample at time one when the families were first assessed. It examines the overall profile and the key outcome variables in the study at time one for anti-social behaviour (the PACS scores) and the child's reading ability (BAS scores).

5.1.1 Profile of data

Numbers in trial

At time one there were 215 families in the trial. As was seen in table 4.2 above the 215 did not differ in their profile from those who decided not to pursue the intervention. For the remainder of the report, the interim and post assessment results are based on this sample of 215.

Return rate for the questionnaires and interviews etc.

The families all completed the assessment, but due to unforeseen events two parents did not complete the full interview. In addition, in seven cases either the parent did not consent for the child to be assessed or it proved impossible to find a time to complete the child assessment, so literacy assessments were completed on 208 of the 215 cases. Questionnaires were returned by 91% of the sample.

Missing data

Sometimes parents did not or could not answer every question on the schedule. To enable the maximum use of the data mean scores were calculated where there were 60% of the questions for each individual measure completed.

Timing of the Assessments

The timing of the assessment was carefully monitored to make sure that the age of the child at assessment was logged and this was also used to measure the interval between assessments as children's reading development is very sensitive to timing.

5.1.2 Key variables

The key **outcome variables** examined at the start of the assessment used to compare with the outcomes at post assessment are:

- 1. The levels of anti-social behaviour found in the sample measured by the Parent Account of Children's Symptoms (PACS).**
- 2. The literacy levels of the children at the start of the intervention measured on the British Ability Scale (BAS).**

NB The sample was selected on the grounds that the children were at risk of anti-social behaviour not on the basis of their reading ability therefore the range within the sample for reading is greater than for the behaviour where it is restricted to those with difficulty.

Parenting measures

Measures of the parenting style were assessed by questionnaire and by interview to assess the association with the primary outcomes and changes over time.

Socio-demographic features

Data was collected on the profile of their family: SES, parental education; family structure, ethnicity.

Secondary variables

Parents' reports of their child's behaviour were also collected from questionnaires: the Visual Analogue Scale and the Eyberg scale were used to assess the intensity of the child's problems and change over time.

5.1.3 Characteristics of the sample

First the associations between the children's anti-social behaviour, reading ability and the parenting style of the families and the socio-demographic features of the sample were explored (see tables 5.1. and 5.2 below).

Associations with anti-social behaviour

Parenting. There were strong associations between negative parenting and child behaviour according to the PACS anti-social behaviour score. Positive parenting was only modestly associated with lower levels of anti-social behaviour in the children. The use of reading strategies was also associated with lower levels of anti-social behaviour in the children.

Secondary outcomes. There were also strong associations between the parents' reports of the intensity of the child's problems as measured by the Visual Analogue Scale (VAS) and child's anti-social behaviour, and between the Eyberg questionnaire of the intensity of the child's problems and the child's anti-social behaviour.

Associations with Reading

Parenting. There were no associations between the measures of parenting and the BAS reading scores.

Secondary Outcomes. There was a significant association between the parents' reports of the child's behaviour on the Eyberg scale and reading levels.

Table 5.1 Correlations of parenting and secondary outcomes with key outcome variables

<u>Parenting behaviour</u>	Mean (SD) / %	PACS ASB	BAS RAW READING SCORE
		<i>r</i> =	<i>r</i> =
Negative parenting (Alabama)	17.20 (3.86)	.27, <u>p<.001</u>***	-.10, p=.23
Positive parenting (Alabama)	26.11 (2.90)	-.16, <u>p<.05</u>*	-.04, p=.50
Use of reading strategies	3.53 (1.80)	-.16, <u>p<.05</u>*	.04, p=.55
<u>Secondary Outcomes</u>			
VAS	6.72 (1.96)	.25, <u>p<.001</u>***	-.09, p=.23
Eyberg	134.46 (32.16)	.54, <u>p<.001</u> ***	-.19, <u>p<.009</u>**

*p<=.05 **p<=.01 ***p<=.001

Socio-demographics and anti-social behaviour. There were no associations between gender and levels of anti-social behaviour in the sample; child's age was associated with the levels of anti-social behaviour with older children having higher levels of child anti-social behaviour. There were also differences between White British and Ethnic Minorities with the latter having lower levels of anti-social behaviour. There were no associations between parental education, SES and anti-social behaviour.

Socio-demographics and reading scores. There were very marked associations between the BAS reading scores and disadvantage levels, measured by SES, parental education, single parenthood, and free school meals.

(For more details of the association between the factors associated with levels of reading see Sylva, Roberts, Beckett, Doolan, Scott, Kallitsoglou & Ford, 2011).

Table 5.2 Socio-demographics and key outcome measures

	Mean (SD) / %	PACS ASB	BAS RAW READING SCORE
Male Gender	56%	t (211) = .66, p=.51	t (206) = .14 p=.89
Child age in months	72.6 (6.61)	r=.21, p<.01 **	r =.44, p<.001***
Ethnicity minority	24%	t (207) = 3.72, p<.001***	t (203)= -.02, p= .98
Single parent	32%	t (208) = -.68, p=.50	t (203) = 3.70, p<.001***
Free school meals	35%	t (193) =-.83, p=.41	t (201) = 3.00, p=.001**
SES	29% unemployed	F (3,197) =2.14, p=.097	F (3,197) = 5.13, p<.01**
Parental Education (Mother left school at 16)	33%	F (2,209)= .77, p=.46	F (2,204) = 3.92, p=.021*

* p<.05 ** p<.01 *** p<.001

Associations between socio-demographic factors and parenting measures. There was a significant association between the gender of the child and the number of reading strategies used, with parents employing more reading strategies with boys, but no differences in the parenting practices according to gender as shown in table 5.3.

Parents with lower SES, those in receipt of free school meals and single parents reported more negative parenting and there was a significant association between the levels of reading strategies employed and the SES of the family, parental education level and receipt of free school meals.

Table 5.3. Associations between Socio-demographics and parenting measures

	Alabama parenting scales	Reading strategies
	Mean (SD) t (df) / r / F	Mean (SD) t (df) / r / F
Gender	Positive parenting	male 3.77 (1.73) female 3.22 (1.84)
	male 26.00 (3.08); female 26.24 (2.68)	t (201) = -2.19, p=.03*
	t (193)=-.57, p=.57	
	Negative parenting	
	male 16.90 (4.03); female 17.54 (3.64)	
	t (193)=.116, p=.25	
Child age in months	Positive parenting r=-.07, p=.37	r= -.12, p=.10
	Negative parenting r= -.00, p=.99	
Ethnicity	Positive Parenting	
	White British 26.01 (2.99); Ethnic minority 26.32 (2.61); t (191) = -.63, p=.53	White British 3.56 (1.83); Ethnic minority 3.44 (1.66); t (198) = .43, p=.67
	Negative Parenting	
	White British 16.97 (3.70); Ethnic minority 18.0 (4.31); t (191) = -1.60 p=.11	
Single parent	Positive Parenting	
	Not single parent 26.28 (2.87); single parent 25.72 (2.95); t (192) = 1.26, p=.21	Not single parent 3.62 (1.95); single parent 3.38 (1.44);
	Negative Parenting	t (198) = .89, p=.37
	Not single parent 16.59 (3.61); single parent 18.56 (4.05); t (192) = -3.40, p=.001***	
Free school meals	Positive Parenting	
	No free school meals 26.00 (2.92); free school meals 26.28 (2.92); t (189) = -.61, p=.55	No free school meals 3.79 (1.89); Free school meals 3.16 (1.53); t(195) = 2.54, p=.012*
	Negative Parenting	
	No free school meals 16.80 (3.78); free school meals 18.07 (3.96); t (189) = -2.13, p=.04	
SES	Positive Parenting	
	F (3,185) = .64, p= .59	F (3,192) = 5.05, p=.002**
	Negative Parenting	
	F (3,185) = 4.84, p=.003**	
Parental Education	Positive Parenting	F (2,169) = 4.49, p=.012*
	F (2,192) = .22, p=.80	
	Negative Parenting	
	F(2,200) = 1.87, p=.16	

*p<=.05 **p<=.01 ***p<=.001

Associations between Socio-demographics and secondary outcome measures. The secondary outcomes: the parents' reports of concerns on the visual analogue scale and the Eyberg scale were not associated with socio-demographic features with the exception of single parents reporting higher levels of problems on the Eyberg scale as shown in table 5.4 below.

5.4 Associations between Socio-demographics and secondary outcome measures

	VAS	Eyberg
	Mean (SD)	Mean (SD)
Gender	Male 6.76 (1.98)	Male 138.31 (33.15)
	Female 6.79 (1.91)	Female 132.82 (30.00)
	t (182) = .10, p=.92	t (193) = -1.21, p=.23
Child age in months	r= .13, p=.09	r -.02, p=.80
Ethnicity minority	White British 6.80 (1.85)	White British 135.95 (33.25)
	Ethnic minority 6.63 (2.23)	Ethnic minority 133.96 (26.93)
	t (180) = .51, p=.18	t (191) = .37, p=.71
Single parent	No 6.71 (1.82)	No 132.37 (29.83)
	Yes 6.88 (2.20)	Yes 142.64 (34.92)
	t(181) = -.55, p=.58	t (192) = 2.12, p=.036*
Free school meals	No 6.69 (1.81)	No 133.08 (28.24)
	Yes 6.91 (2.50)	Yes 140.15 (37.64)
	t(178) = -.68, p=.50	t(189) = -1.44, p=.15
SES	F (3,176) = 1.34, p=.26	F (3,186) = 2.41, p=.07
Parental Education	F (2,181) = .53, p=.59	F (2,192) = .04, p=.96

*p<=.05 **p<=.01 ***p<=.001

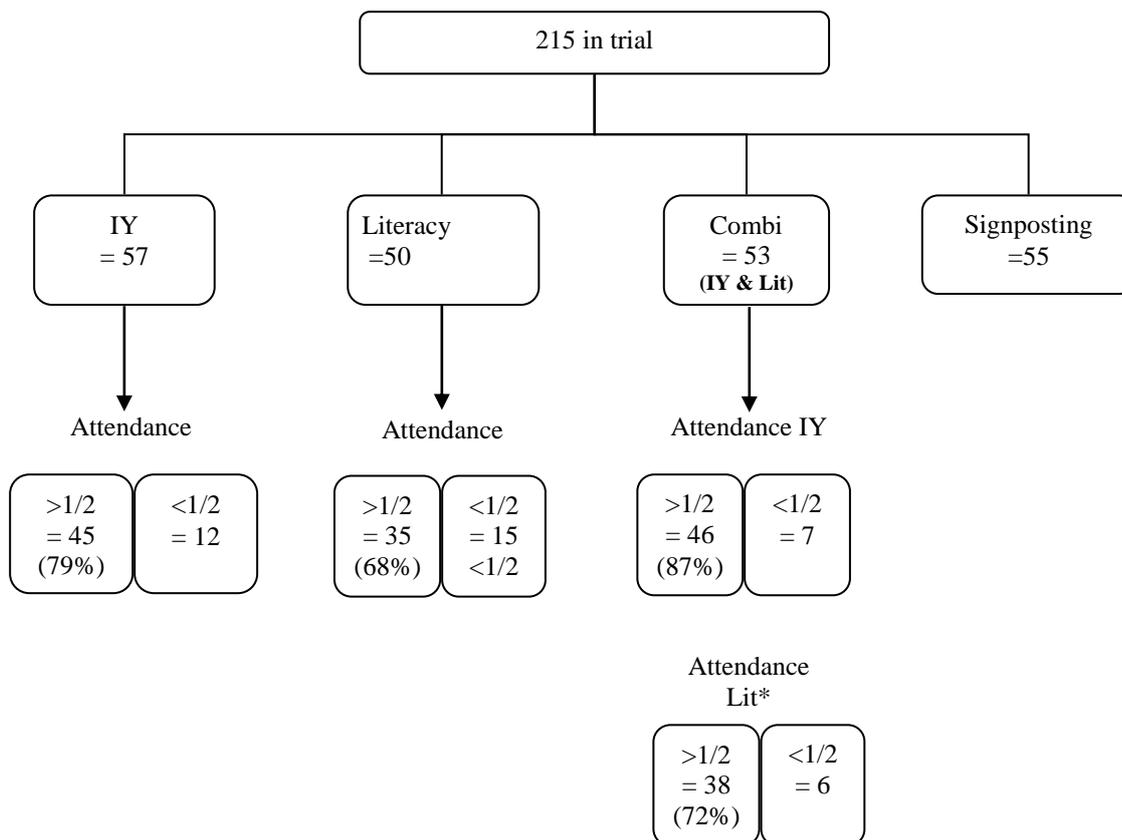
Summary of baseline data

- The baseline data indicated a strong association between the child's risk of anti-social behaviour and the nature of the parenting with in particular negative parenting or aversive discipline being the most strongly associated factor with poor outcomes.
- In contrast, reading ability was not associated with parenting but very strongly associated with SES and parental education as has been found in many previous studies.
- Socio demographic factors such as SES, parental education and receipt of schools meals were associated with lower reading levels and reading strategies and there were some associations between negative parenting and SES and single parent status.

5.2 Trial sample and attendance at the interventions

- The 215 families in the trial were randomised to the four different interventions: the Incredible Years; the SPOKES programme; a combined SPOKES-IY programme or Signposting to existing services. All had attended at least one session of the IY, SPOKES or Combi or were in the Signposting arm.
- The interventions ran for nine terms in the inner London authority and eight terms in the South West city. Each course with the exception of the Combi ran for one term, the Combi for two terms.
- Attendance rates were high. The majority of parents (78%) attended more than half of the sessions of the parent programme as shown in chart 5.1. below.
- The median number of sessions attended by the 160 participants in the interventions was nine sessions.

Chart 5.1 Attendance at interventions



*9 participants did not attend the SPOKES-literacy component of the combined group

5.2.1 Profile of participants according to interventions

Although the randomisation was 'blind', with a relatively small sample there is a potential risk of a degree of bias in the allocation of interventions. To control for this the profile of the participants at time one in terms of age, gender, family structure, ethnicity SES, educational background etc. was examined according to allocated intervention.

There was some variation in the profile of the participants according to the intervention as shown in table 5.5 (see the highlighted cells).

- Primary outcomes: there was a tendency for those in the signposting group to have children with a lower level of difficulty on the PACS anti-social behaviour. The Combi group and the SPOKES group had significantly lower scores than the signposting or IY groups on the BAS word reading score.
- Parenting: there were no variations between the four groups in terms of the parenting see table 5.5 apart from a lower level of reading strategies used by the parents in the SPOKES group.
- Socio-demographics: there were proportionally more ethnic minorities who attended the IY courses; mothers in the literacy group were younger; In the Combi group more mothers had left school at 16. This was not a consistent pattern, suggesting that the variation that occurred was more likely to be due to chance factors than to any bias in the randomisation process.
- Secondary outcomes: there were significant differences on the Eyberg scale, with the signposting group reporting lower levels of difficulty, but not for the level of difficulties reported on the VAS.

The potential of bias in those who did not attend the intervention was also examined.

- As the trial was designed to recruit families with children who were at risk of anti-social behaviour rather than poor reading it was hypothesised that some of the families who had children who were able readers may not have attended if they were allocated to the SPOKES group. This might have accounted for the lower reading scores in this group, but a check of the data showed that there was no significant difference in the reading scores of the children whose families had not attended the SPOKES group from those who continued. The mean reading scores reported by parents for those who withdrew was 3.47 (1.43) on a 6 point scale of cannot read to reads very well and for those who continued with the SPOKES intervention 3.30 (1.59) $t(64) = .42, p=.68$.
- The proportion from the two recruitment routes (screen and referral) in each arm of the intervention was also explored and was very similar for all four arms 74-80% from the screen and 20-26% from referrals.

Table 5.5 Characteristics of participants according to intervention at baseline

Primary Outcomes

	<u>IY</u>	<u>SPOKES</u>	<u>Combi</u>	<u>Signposting</u>	<u>Significance</u>
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Child's PACS ASB	1.49 (.45)	1.48 (.42)	1.40 (.42)	1.23 (.41)	F (3,209) = 4.27, p<.01**
Child reading score (BAS)	22.70 (17.13)	17.35(17.32)	15.40 (15.68)	27.04 (20.22)	F (3,204) = 4.58, p<.01**

Parenting Behaviour

Use of reading strategies	3.98 (1.91)	2.91 (1.77)	3.75 (1.56)	3.39 (1.78)	F (3,199) = 3.45, p<.05*
Negative parenting (Alabama)	17.84 (3.42)	16.59 (4.10)	17.30 (3.72)	16.97 (4.20)	F (3,191) = .93, p=.43
Positive parenting (Alabama)	25.59 (3.24)	25.84 (3.02)	26.49 (2.69)	26.56 (2.52)	F (3,191) = 1.40, p=.25

Socio-demographic factors

Gender	Male 65%	Male 50%	Male 59%	Male 50%	$\chi^2= 3.76$, p=.29
Child age in years	6.1 (.55)	6.1 (.56)	5.9 (.53)	6.1 (.54)	F (3,211) = 2.20 p=.09
Ethnic minority	36%	22%	13%	25%	$\chi^2= 7.63$, p=.05*
Single parent	34%	32%	35%	28%	$\chi^2= .70$, p=.87
Free school meals	31%	43%	35%	31%	$\chi^2= 1.84$, p=.61
SES % unemployed	28%	35%	33%	21%	$\chi^2=10.91$, p=.28
Parental Education (left at 16)	22%	47%	29%	36%	$\chi^2=25.29$, p<.001***

Secondary Outcomes

Eyberg intensity scale	142.62 (31.99)	138.10 (29.69)	138.10 (30.74)	124.13 (32.10)	F (3,191) = 3.34, p<.05*
VAS intensity score	6.7 (2.03)	6.93 (1.92)	6.67 (1.80)	6.76 (2.04)	F (3,180) = .12, p=.95

*p<=.05 **p<=.01 ***p<=.001

Summary of the participation in the intervention

- Attendance rates at the intervention were high with 78% attending more than half the sessions and the median number of sessions attended was nine.
- Although the profile of the attendees varied between groups on some measures, this was not a consistent pattern so appeared to be reflecting the random allocation of the cases between the groups.
- Those who engaged in SPOKES did not differ in reading ability from those who chose not to attend.
- Participants in all groups were a mixture of those from referral and those from the screen population.

5.3 Short-term results with parental perception measures

In this section the findings from the questionnaires that were given to the parents at the end of the intervention were examined and compared with those at the pre-assessment. Questionnaires were completed by 129 parents.

5.3.1 Questionnaires

The first set of questions asked parents a) how confident they felt at managing the child's behaviour now b) how confident they felt about managing their problems in the future and c) how helpful they found it being in the study (in any of the four arms) .

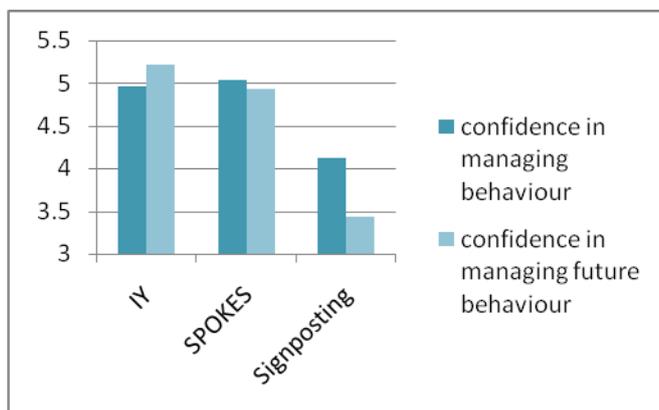
How confident did the parent feel in managing the child's behaviour?

- Parents were asked how confident they felt in dealing with their child's behaviour and how they felt about the future. This was asked on a six point scale and this indicated that after the intervention both the IY and the SPOKES groups felt significantly more confident than the signposting group in dealing with the child's behaviour ($F(2,129) = 3.39, p < .05$).

Confidence in the future

- When asked about their confidence in dealing with their child's behaviour in the future the parents in the IY or SPOKES groups felt more confident than those in the signposting group in their ability to manage their child's behaviour, ($F(2,127) = 13.60, p < .001$).

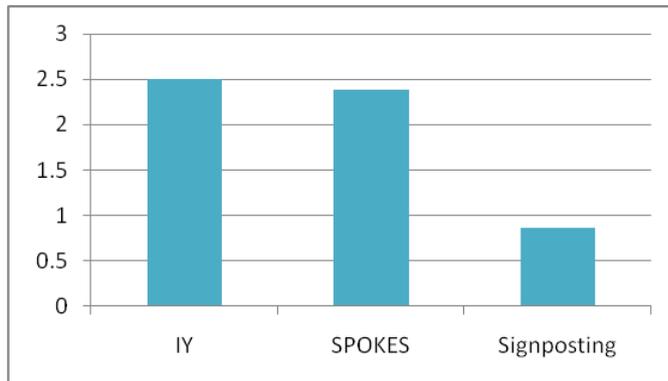
Figure 5.1 How confident were the parents in managing the child's behaviour now and in the future?



Had the study been helpful?

- When their responses were analysed there was a significant difference between the groups in how helpful they found the interventions offered through the study (measured on a four point scale 0 not at all helpful to 3 very helpful). The groups in the Incredible Years and SPOKES arms reported that they had found the involvement in the interventions through the study significantly more helpful than the signposting group ($F(2,130) = 46.97, p < .001$).

Figure 5.2 Were the interventions offered through the study helpful?



There were three other parents' questionnaires:

- 1) The Visual Analogue Scale where a parent reports on the intensity of the behavioural problem they are most concerned by;
- 2) The Alabama parenting questionnaire and
- 3) The parental perception of the children's reading ability.

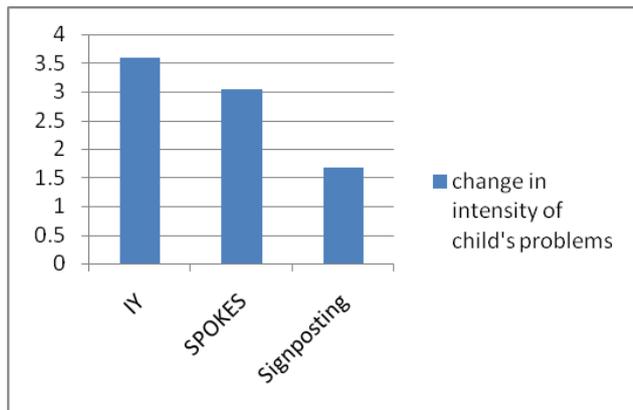
The answers to the questions were compared across time and also according to the type of intervention.

(Please note that as the combination of the IY and the SPOKES group ran over two terms, those families randomised to the Combi- arm were included within the IY group for these analyses, as the questions were asked during and at the end of the first term).

Visual Analogue Scale: Parent reports of the intensity of the child's problems

- Parents were asked to list three key problems they were experiencing with their child and rate the degree of difficulty on a 10 point scale; then after the 12 weeks of the intervention they were asked to rate the intensity of the same problems. As can be seen there was significant change in their report of the intensity of the first problem after the 12 week intervention for those in the IY group and this was more marked in the IY groups $F(2,114) = 5.16, p < .05$ relative to the SPOKES-literacy and signposting groups.
- Typical examples of the problems that the parents had experienced were temper tantrums, the child refusing to do as asked, stubborn behaviour and not listening.

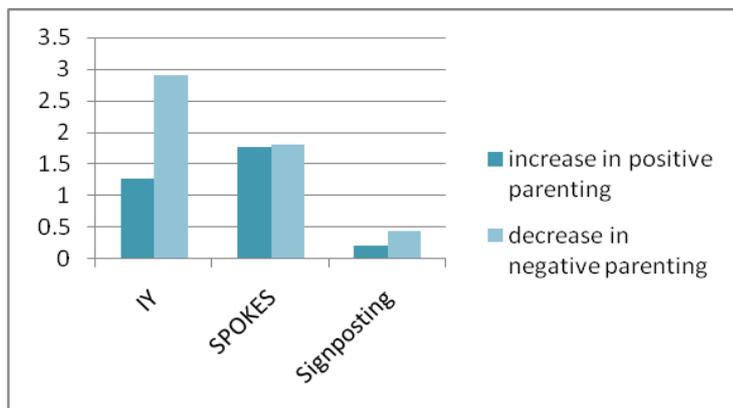
Figure 5.3 Changes in intensity of the child's problems according to the intervention



Alabama Parenting Questionnaire

- Parents were also asked at the pre assessment and after the intervention about their positive and negative parenting practices. Positive parenting increased relative to the signposting group but this result did not quite reach significance ($F(2,125) = 2.83, p=.063$). Negative parenting significantly decreased $F(2,118) = 4.20, p<.05$).

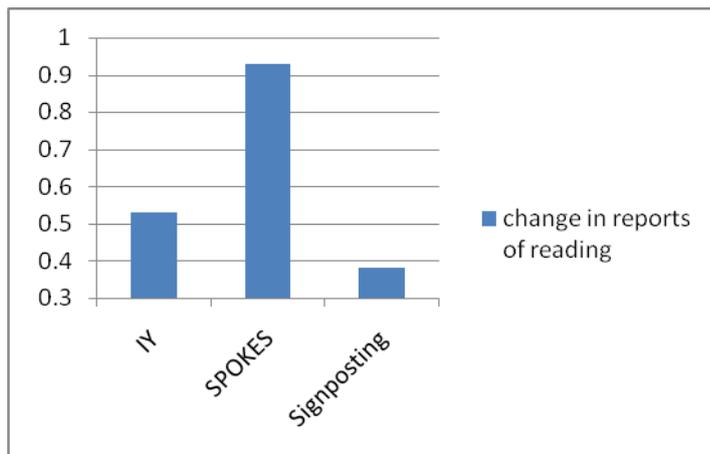
Figure 5.4. Positive and negative parenting changes in parenting



Reading ability

Parents were asked how well they felt that their child was reading on a six point scale (the same as had been asked at the screen). After the 12 weeks of the intervention there was a difference that approached significance between the perceived reading ability of group who had attended the SPOKES and the signposting group ($t(45) = 2.21, p<.05$); the difference between SPOKES and IY groups was in the expected direction but did not reach statistical significance.

Figure 5.5 Changes in perceptions of reading ability according to intervention



Summary of short-term results

- Parents reported improvements in their confidence in dealing with their child's behaviour if they had attended the IY or the SPOKES groups.
- If they were in the Incredible Years or SPOKES intervention arm rather than the signposting arm they reported that they found the trial helpful.
- The parents' reports of the intensity of the children's problems had decreased in both the IY and SPOKES groups relative to the signposting arm, but the reduction was more marked for the IY group than the SPOKES group.
- Both the IY and SPOKES groups had shown an increase in positive parenting, and a reduction in negative parenting relative to the signposting arm of the trial.
- Parents reported improvements in their child's reading ability 12 weeks after the start of the intervention and these improvements were more marked in the group who had attended the SPOKES intervention.
- At the post assessment, with more definitive objective measures, it will be possible to analyse whether these improvements are confirmed and sustained and whether they are validated by independent assessment of the child's behaviour and literacy skills. Also at the post assessment stage the combined group will have had the SPOKES-literacy component of the trial and this will provide a stronger test of the efficacy of the SPOKES intervention.

5.4 Results at post assessment 9-11 months after intervention, using detailed measures

The families were assessed again 9-11 months after the start of the intervention. Unlike at the previous stage, at the post assessment it was possible to compare all the four groups (IY, SPOKES, Combi and Signposting) individually; 174 families (82%) completed the post assessment.

Comparisons were made for the following measures at pre and post assessment for the four groups:

- 1) The primary outcomes: the PACS interview measures of anti-social behaviour; objective tests of child reading ability;
- 2) Parenting measures: Interview and questionnaire measures of parenting including positive and negative parenting and reading strategies;
- 3) Secondary analyses: Eyberg questionnaire, intensity scale; Visual Analogue Scale of parents' perceptions of child's problems.

Analyses were conducted in General Linear Model repeated measures Analysis of Covariance (ANCOVAs) in SPSS to assess the change in measures over time according to interventions, controlling for socio-demographic and other child factors (the socio-demographic factors as listed in tables 5.2, 5.3 and 5.4 as well as two child related factors that could be associated with outcome: the child's ADHD scores and whether they were in receipt of special education).

5.4.1 Primary outcomes

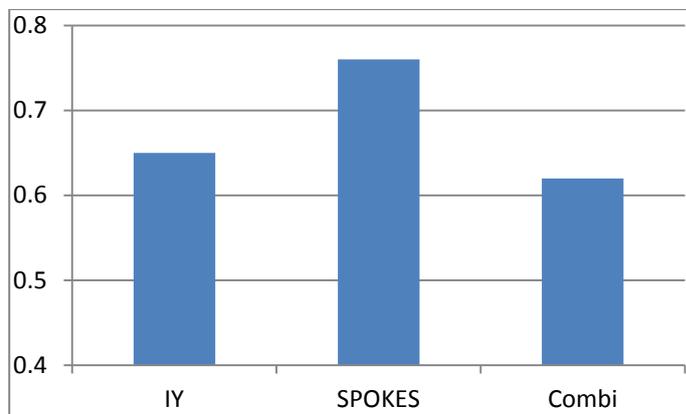
Anti-social behaviour. As shown in table 5.6 and figure 5.6, there was a significant interaction for the treatment groups over time on anti-social behaviour between the Incredible Years, SPOKES and the Combi intervention relative to the signposting (control) group. These results were controlled for the child's age at assessment and whether the child had any special needs.

Table 5.6 Primary outcomes Pre and Post scores on the PACS ASB scores

	Pre-Assessment	Post assessment	Change score	Change score vs. Signposting	Effect size	Significance (controlled for age and special needs)
	PACS ASB	SCORES				p
IY	1.47 (.43)	1.23 (.5)	.24	.22	.65	.018*
SPOKES	1.47 (.39)	1.19 (.45)	.28	.26	.76	.002**
Combi	1.46 (.42)	1.23 (.40)	.23	.21	.62	.005**
Signposting	1.16 (.34)	1.18 (.46)	.02			

*p<=.05 **p<=.01

Figure 5.6 Graph of effect sizes for change in anti-social behaviour (relative to signposting)



Reading scores. As shown in table 5.7 for reading there was a significant interaction for the treatment over time in the scores of the IY group in reading relative to the signposting group. Whilst all groups improved in their reading scores there was no significant interaction between the groups who has received the literacy intervention and the signposting group. However, the relative percentage change in scores from time one to time two was greatest for the two groups who were involved in the literacy and IY interventions relative to the signposting: 70 – 89% whereas for the signposting group the relative change was 47% (calculated by dividing the change by the score at time one).

Table 5.7 Primary outcomes Pre and Post scores on the BAS scores

	BAS RAW	SCORES	Change score	Change score vs. Signposting	Effect size	Significance (controlled for ADHD & Single Parent)
	Pre-Assessment	Post assessment				
IY	22.60 (17.35)	40.00 (20.92)	17.4	4.60	.23	.016*
SPOKES	18.89 (18.76)	32.14 (19.38)	13.25	.45	.02	.61
Combi	17.35 (16.03)	32.80 (20.49)	15.45	2.65	.13	.16
Signposting	27.83 (20.15)	40.63 (22.77)	12.80			

*p<=.05 ** p<=.01

For the BAS reading scores the significant co-variants were whether the family was a single parent family and the child’s level of ADHD. A regression analysis was run for the children’s literacy outcomes controlling for the children’s score at time one. The major predictive factor of the time two scores was the BAS score at time one which predicted 76% of the variance. The interaction between whether the child was in a single parent household or a two parent household and the intervention and the interaction between the intervention and the child’s level of ADHD together only added a further significant 2.5% to the variance.

5.4.2 Parenting Behaviour

Next the measures of parenting at time one and time two were examined as shown in table 5.8 and figure 5.7. For the Alabama negative parenting scale there was a significant interaction over time for the IY group in the reduction in the level of negative parenting relative to the signposting group.

For the reading strategies there was a significant interaction over time for the two groups who had received the literacy intervention: the SPOKES group and the Combi group relative to the signposting group and a significant difference between IY and Combi ($p < .001$) and IY and SPOKES groups ($p = .004$). Both the groups that had received the SPOKES intervention were using a significantly greater number of reading strategies at time two relative to time one.

The significant co-variants included in the analyses were the pre and post interval and SES for the Alabama negative scores. There were no significant co-variants for the reading strategies.

Figure 5.7 Effect sizes of change in positive parenting and in reading strategies relative to signposting group

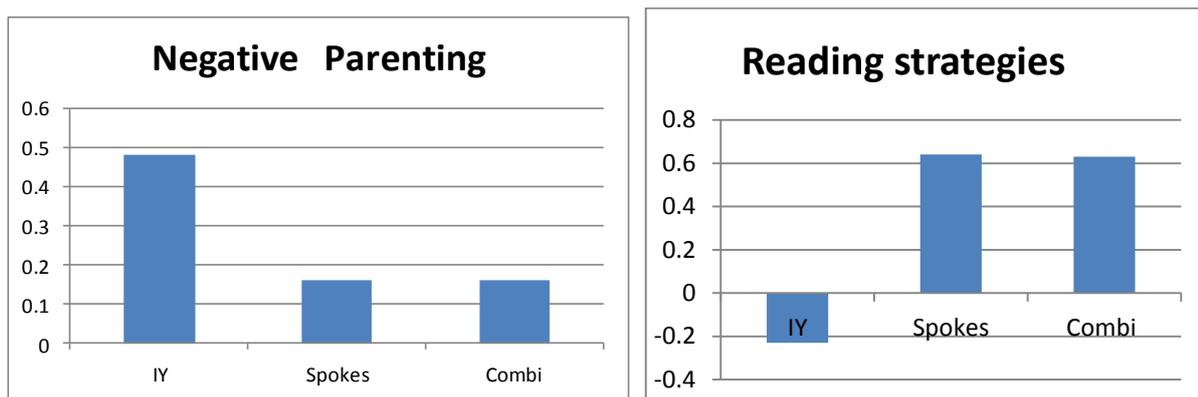


Table 5.8 Parenting Behaviour pre and post intervention

	Pre-Assessment	Post assessment	Change score	Change score vs. SP	Effect sizes	Sig (controlling for Parent education)
	POSITIVE	PARENTING	ALABAMA			p
IY	25.27 (3.50)	26.48 (2.94)	1.21	.81	.32	.048*
SPOKES	26.21 (2.76)	27.21 (2.80)	1.00	.60	.23	.19
Combi	26.06 (2.90)	27.38 (2.65)	1.32	.92	.36	.056
Signposting	26.55 (2.56)	26.95 (2.53)	.40			
	NEGATIVE	PARENTING	ALABAMA			(co-variants SES & pre-post interval)
IY	18.30 (3.28)	15.17 (3.53)	2.77	1.50	.34	.006**
SPOKES	16.68 (4.58)	14.63 (3.92)	2.05	.78	.18	.31
Combi	17.24 (3.61)	15.54 (3.25)	1.70	.43	.04	.197
Signposting	16.81 (4.36)	15.54 (3.83)	1.27			
	READING	STRATEGIES				
IY	4.07 (1.87)	4.27 (2.04)	.2	-.41	-.23	.38
SPOKES	3.14 (1.66)	4.91 (1.90)	1.77	1.16	.64	.017*
Combi	3.97 (1.42)	5.72 (1.69)	1.75	1.14	.63	.005**
Signposting	3.49 (1.82)	4.10 (1.82)	.61			

*p<=.05 ** p<=.01 ***p<=.001

5.4.3 Secondary Outcomes

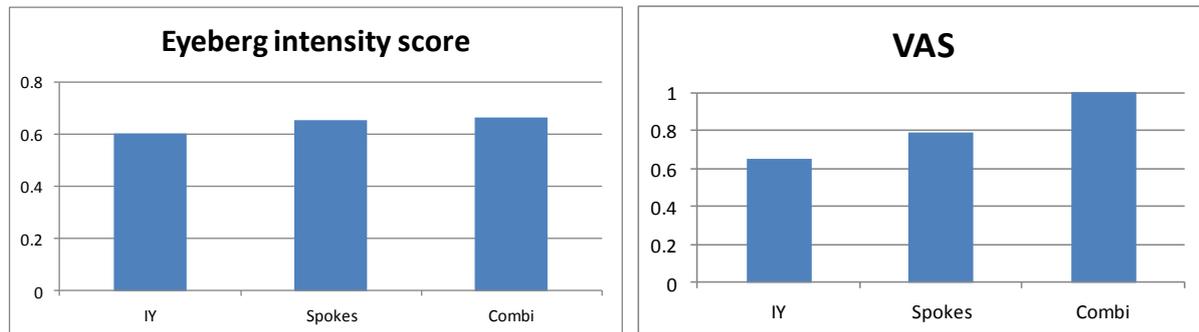
For the parent reports of the intensity of their child’s problems on the Eyberg and the reports of the children’s behaviour on the VAS there was a significant interaction over time for the IY, SPOKES and Combi group relative to the signposting group as shown in figures 5.8 and table 5.9. There were no significant differences between the IY, SPOKES and literacy groups. There were no significant co-variants for the secondary outcomes.

Table 5.9 Secondary Outcomes pre and post intervention

	Pre-Assessment	Post assessment	Change score	Change score vs. SP	Effect size	Sig
	Eyberg	Questionnaire				P
IY	143.40 (30.79)	119.01 (32.47)	24.39	18.62	.60	.009**
SPOKES	133.02 (30.93)	107.04 (35.34)	25.98	20.21	.65	.002**
Combi	139.28 (27.75)	112.78 (29.75)	26.5	20.73	.66	.000***
Signposting	124.98 (31.26)	119.21 (29.25)	5.77			
	VAS					
IY	6.76 (2.05)	3.83 (2.53)	2.93	1.34	.65	.034*
SPOKES	6.80 (1.64)	3.59 (2.02)	3.21	1.62	.79	.007**
Combi	6.63 (1.81)	2.97 (2.11)	3.66	2.07	1.00	.001***
Signposting	6.81 (2.06)	5.22 (2.24)	1.59			

*p<=.05 **p<=.01 ***p<=.001

Figure 5.8 Effect sizes of change in Eyberg intensity score and VAS relative to signposting



Summary of findings at post assessment

- The results at post assessment show a substantial effect for the IY, SPOKES and combined group relative to the signposting group on anti-social behaviour and, for the IY group, literacy outcomes too.
- There was also a reduction in negative parenting for the group who did the Incredible Years and an increase in positive parenting. There was a significant effect on the use of reading strategies for those who attended the literacy interventions.
- For the secondary outcomes there was a significant reduction in the parents' reports of the intensity of the problems for the IY, SPOKES and Combi groups relative to the signposting group.
- Perhaps surprisingly, the IY programme improved reading although it was not focused on it, and the SPOKES literacy programme improved behaviour but not literacy
- The data at post assessment shows a range of effects from the IY, SPOKES and combined interventions which are very positive outcomes of the trial.

6. Discussion and conclusions

6.1 Substantive findings

6.1.1 Recruitment and retention. This is one of the largest and most complex studies of interventions for helping children achieve their potential and avoid social exclusion. Over 200 children were recruited into the trial.

- Our results suggest that school-based screening for targeted interventions to alleviate the risk of childhood antisocial behaviour is feasible and acceptable to parents and teachers.
- Approximately a third of those who screened positive were interested in engaging in the interventions, despite the restrictions of participating in a trial. This proportion might increase if families were offered the intervention as a service directly, without being part of a study that involved the risk of being randomised to not receiving a parenting programme.
- The parents of children with more severe difficulties were more likely to participate. We were able to engage those at greatest need.
- Once they had attended the first session, nearly 80% of the parents attended at least half of their allocated course. Such a high level of engagement suggests that the content of the courses were acceptable and useful to these parents, since the commitment of two hours per week is a large amount of time for many of the parents, who were very busy.
- Attendance at the stand alone SPOKES literacy course was slightly lower, with 68% attending at least half the sessions. However, as in all arms of the trial, the children were recruited due to their risk of antisocial behaviour rather than their literacy difficulties. Parents who felt their children were good readers may have been less keen to attend sessions as the content may have seemed less relevant to them. Attendance might have been even higher had parents been recruited because of concerns about their child's literacy.

6.1.2 Links between parenting and child characteristics. At baseline, parents living in socio-economic deprivation, particularly the long term unemployed, reported the most difficulty with their child's literacy. Although there were no associations between SES and disruptive behaviour there were associations between the use of positive reading strategies and lower levels of anti-social behaviour. As both were measured at the same time, we cannot tease apart if children with higher levels of anti-social behaviour are harder to encourage to read, so parents developed fewer strategies, or if relationship issues between parents and children where there is a higher levels of anti-social behaviour mean that it is substantially harder for parents to encourage reading and parents withdraw from children who are difficult to be with. In practice, several of these

factors are likely to operate in a circular rather than a linear fashion. In a previous DfE research report (no.185a, 2012) we had shown in this sample that harsh, inconsistent parenting was associated with double the rate of child behaviour problems.

6.1.3 Outcomes of the interventions. We had four hypotheses at the outset of the trial, which are repeated below and which drove the design and conduct of the study.

1. Children of parents who attended the SPOKES literacy programmes would experience a significant enhancement of their reading ability. This was not confirmed, despite the fact that parents used the techniques correctly. However, the programme did lead to improved child behaviour.
2. Children of parents who attended the IY relationship programmes would demonstrate a significant improvement in their behaviour. This was confirmed, and moreover child literacy improved.
3. Parents who attended the IY relationship programmes would show increased use of positive parenting techniques and decreased use of less desirable parenting strategies. This was confirmed.
4. Parents who attend the combined interventions would experience improvements in both their children's literacy and behaviour. This was true for behaviour, but not for literacy.

The short-term data was collected at twelve weeks, which fell at the end of the intervention for SPOKES and IY and half way through it for the Combi group. At this point, parents attending the IY course reported that they were more confident about managing their child's behaviour now and in the future, and reported a reduced use of negative parenting strategies. The parents who attended the SPOKES course reported increased perceived improvements in their child's literacy. These increases in confidence are important motivators for parents and suggest they are likely to continue to use the strategies learned.

In the longer term, at 9-11 months, there were clear improvements in children's behaviour in the IY, SPOKES and Combi groups relative to signposting, and improved literacy among the IY group relative to the other three groups.

The parents attending the IY course demonstrated a significant reduction in negative parenting techniques relative to the other groups, and also a significant increase in positive parenting strategies. Therefore it might be expected that they would show a substantial reduction in child anti-social behaviour, which was indeed found. However, parents attending the SPOKES literacy programme *also* saw a reduction in child anti-social behaviour. This is an intriguing finding, and there are a number of possible explanations. One is that parents who attended the SPOKES literacy course may have taken on board strategies discussed in relation to managing behaviour around reading practice to manage their child's behaviour. The SPOKES intervention includes two additional sessions on how to help children to concentrate and not be oppositional

during shared reading and is grounded on the Incredible Years approach and in this study was delivered by IY trained staff. So it is possible that parents used these strategies more widely. Two, against this explanation is the parents' reporting of the general parenting strategies they used, which did not show significant change. Three, an alternative explanation is that the children felt more secure in their relationship with their parents due to the increased attention around literacy issues (their parents reported using the reading techniques more) and so behaved better; or four that being better readers made them enjoy home life more and behave better.

Equally intriguing is that the IY relationship programme improved child reading. This was an unexpected finding. The IY programme has a limited amount of content around encouraging homework, but does not address supporting reading in a very detailed way. It is possible that better contained and attended to children are more able to settle and learn. It would now be good to replicate this finding in another sample.

It is too early for us to be in a position to report on whether access to the trial increases or decreases costs in the short term compared to service use at baseline (Stevens, Beecham & NAPR HCA team, 2012). The 9-11 month post assessment economic data is currently being cleaned and analysed.

6.2 Strengths and weaknesses of the study

The study was carried out in two different local authorities, both of which are representative in their profile for children growing up in disadvantaged circumstances. The inner London Borough included families living in marked levels of deprivation and contained a high level of people from black and ethnic minorities, while the city in the South West was predominantly white. The contrast between the two authorities is strength as the effects of the interventions were similar in both areas, so the findings should generalise to local authorities with a population mix that lies between these two. The levels of disruptive behaviour and the level of take up in the trial were remarkably similar in both authorities. There were some differences between the four intervention groups at baseline, but the pattern suggested that these were random.

We successfully recruited approximately a third of those who were eligible into the trial and over three quarters of those who engaged attended at least half of the sessions offered to them. However, two thirds of the parents who were invited to participate declined. Some parents were not able to attend at the time the interventions were running, and this proportion might be reduced in a situation where more courses could be run across a greater range of times. It is unlikely that we could ever reach a situation of 100% uptake of targeted interventions for parenting courses, but continued publicity that indicated the importance and effectiveness of such interventions, perhaps combined with incentives to encourage employers to allow staff time off to attend might also increase engagement (Sanders, Markie-Dadds, Tully, & Bor, 2000). Parents whose children develop antisocial behaviour often experience additional costs and may be prevented from working (Whitehead, Stockdale & Razzu, 2003). Similarly, parents whose child's behaviour is causing difficulty are also more likely to experience depression and anxiety and be less able to function, both of which might suggest that employers have a vested interest in supporting parents to access this kind of intervention.

The measures used in this trial were of good quality, and included detailed semi-structured interviews of proven validity, and standardised reading tests were carried out at school by researchers who were blind to which group the children were in. Using a randomized design is the gold standard for comparing treatments. However, the sample size in each group was relatively small, despite being adequately powered to detect significant differences.

6.3 Future research stemming from this study

Our results suggest that the IY intervention is effective in reducing anti-social behaviour and improving reading. As far as we know this is the first study to show this, it would be worth replicating. The literacy programme has yet to be tested in a sample selected for literacy difficulties alone, and it would be interesting to study the intervention among children of different age groups and different literacy levels to assess for whom it is likely to demonstrate the biggest impact. We also need to better understand how these programmes impact on children's developmental trajectories in the longer term; further follow up of this sample would be an ideal way to do this. Anecdotally, in clinic parents often report that the IY intervention is hugely beneficial in the short term, but that as subsequent challenges and difficulties hit the family, new behavioural challenges emerge, the newly acquired skills falter and that some kind of "booster" would be useful. Future research should elucidate what form of booster parents would most value and test different methods of supporting continued improvement at different times after baseline to understand what works best, for whom and why.

The interventions in the current study were, with the exception of the signposting, all group-based, and it is likely that some people declined to participate because they anticipated that the group situation would be overwhelming. In addition, not everyone who participated demonstrated improvement, despite the effect sizes attained at group level. Further research should focus on which parents can gain benefit from the group courses and which parents might do better with more intensive home-based interventions to prevent wasting resources on parents who experience greater benefit from a different approach.

6.4. Conclusion

In conclusion, the Helping Children Achieve trial provides robust evidence that the IY programme is effective at improving parenting strategies and reducing the risk of antisocial behaviour and improving child literacy, while the SPOKES programme is effective at improving parents reading strategies and reducing the risk of antisocial behaviour but did not, in the time span measured, improve child literacy levels. The combined programme did not seem to add any extra benefits. The results support rolling out the IY intervention, especially for families living in socio-economically disadvantaged circumstances because in this and other samples these children are more likely to have higher levels of anti-social behaviour and poor reading skills (Field, 2010).

References

- Aitken, R.C.B. (1969). Measurement of feelings using Visual Analogue Scale. *Proceedings of the Royal Society of Medicine*, 62, 989–993.
- Allen, G. (2011) *Early Intervention: The Next Steps: An Independent Report to HM Government*. London: Cabinet Office.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders*. 4th ed. Washington, DC: American Psychiatric Association.
- Beckett, C., Kallitsoglou, A., Doolan, M., Ford, T., Sylva, K., Scott, S. & the HCA study teams. (2010). *Helping Children Achieve: Summary of the study 2007-2010 and preliminary findings*, Report to DfE. London: NAPR/King's College London.
- Boggs, S.R., Eyberg, S. & Reynolds, L. (1990). Concurrent validity of the Eyberg Child Behaviour Inventory. *Journal of Clinical Child Psychology*, 19, 75-78.
- Bus, A., van IJzendoorn, M.H. & Pellegrini, A.D. (1995). Joint book reading makes for success in learning to read: a meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65, 1-12.
- Cohen, M. & Piquero, A. (2009). New evidence on the Monetary Value of Saving a High Risk Youth. *Journal of Quantitative Criminology*, 25, 25–49.
- Communities and Local Government. (2008). *The English Indices of Deprivation 2007*.
- Dunn, L., Dunn, L., Whetton, C. & Burley, J. (1997). *British Picture Vocabulary Scale (Revised)*. Slough, Bucks: NFER-Nelson Publishing Co.
- Elliot, C.D., Smith, P. & McCulloch, K. (1996). *British ability scales second edition (BAS II)*, Windsor, UK: NFER-Nelson.
- Fergusson, D. M., Horwood, L. J. & Ridder, E. M. (2005). Show me the child at seven: the consequences of conduct problems in childhood for psychosocial functioning in adulthood. *Journal of Child Psychology and Psychiatry*, 46(8), 837-849.
- Field, F. (2010). *The Foundation Years: preventing poor children becoming poor adults: An Independent Review on Poverty and Life Chances to HM Government*. London: Cabinet Office.
- Ford, T., Hamilton, H., Goodman, R. & Meltzer, H. (2005). Service contacts among the children participating in the British Child and Adolescent Mental Health Surveys. *Child and Adolescent Mental Health*, 10(1), 2-9.
- Ghate, D. & Hazel, H.N. (2002). *Parenting in poor environments: stress, support and coping*. Philadelphia, PA/London: Jessica Kingsley.

- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40, 1337-1345.
- Hinshaw, S. P. (1992). Externalising behaviour problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin*, 111(1), 127-155.
- Lee, W., Jones, L., Goodman, R. & Heyman, I. (2005) Broad Outcome Measures May Underestimate Effectiveness: An Instrument Comparison Study. *Child and Adolescent Mental Health* 10.3 143-144.
- Kallitsoglou, A., Beckett, C., Ford, T., Doolan, M., Sylva, K., & Scott, S & the HCA teams (2011) *The value of the Strengths and Difficulties Questionnaire and the DSM-IV Oppositional Defiant Disorder items in predicting antisocial behaviour* Report to the DfE NAPR/ King's College, London
- Loeber, R. & Farrington, D. (2000). Young children who commit crime: epidemiology, developmental origins, risk factors, early interventions, and policy implications. *Development and Psychopathology*, 12, 737-762.
- McNaughton S., Glynn, T. & Robinson, V. (1987) *Pause, Prompt and Praise: effective tutoring for remedial reading*. Birmingham: Positive Products.
- Mattingly, D. J., Prislin, R., McKenzie, T. L., Rodriguez, J. L. & Kayzar, B. (2002).Evaluating evaluations: The case of parent involvement programs. *Review of Educational Research*, 72(4), 549-576.
- Merrett, F. (1998). Helping readers who have fallen behind. *Support for Learning*, 13(2), 59-64.
- Moher, D., Schulz, K.F. & Altman, D.G., for the CONSORT Group. (2001). The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomised trials. *The Lancet*, 357, 1191-94.
- National Academies of Science. (2009). *Preventing mental, emotional, and behavioral disorders among young people: progress and possibilities*. Washington, D.C.: The National Academies Press.
- Office for National Statistics. (2005). *The National Statistics Socio-economic Classification User Manual*.
- Office for National Statistics. (2002). *Social Focus in Brief: Ethnicity 2002*.
- Phillips, L.M., Norris, S.P. & Anderson, J. (2008). Unlocking the door: Is parents' reading to children the key to early literacy development? *Canadian Psychology*, 49, 82-88.
- Sanders, M.R., Markie-Dadds, C., Tully, L.A. & Bor, W. (2000). The Triple P-Positive Parenting Program: A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, 68(4), 624-640.

Sanders, M.R., Montgomery, D.T. & Brechman-Toussaint, M.L. (2000). The mass media and the prevention of child behavior problems: The evaluation of a television series to promote positive outcome for parents and their children. *Journal of Child Psychology and Psychiatry*. Vol.41 (7) 939-948.

Scott, S., Knapp M., Henderson, J. & Maughan, B. (2001). Financial cost of social exclusion: follow up study of antisocial children into adulthood. *British Medical Journal*, 323, 191-194.

Scott, S., Spender, Q., Doolan, M., Jacobs, B., & Aspland, H. (2001). Multicentre controlled trial of parenting groups for child antisocial behaviour in clinical practice. *British Medical Journal*, 323, 194-197.

Scott, S., Sylva, K., Doolan, M., Price, J., Brain, J., Crook, C. & Landau, S. (2010). Randomised controlled trial of parent groups for child antisocial behaviour targeting multiple risk factors: the SPOKES project. *Journal of Child Psychology and Psychiatry*, 51(1), 48-57.

Scott, S., Sylva, K., Beckett, C., Kallitsoglou, A., Doolan, M. & Ford, T. (2012). Should parenting programmes to improve children's life chances address child behaviour, reading skills, or both? Rationale for the Helping Children Achieve trial. *European Journal of Developmental Psychology* 9.1, 47-60.

Scott, S. (2010). National dissemination of effective parenting programmes to improve child outcomes. *British Journal of Psychiatry* 196, 1-3.

Shelton, K.K., Frick, P.J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, 25, 317-329.

Stateva, M., Minton, J., Beckett, C., Doolan, M., Ford, T., Kallitsoglou, A, Scott, S. & the HCA teams (in press). Challenges recruiting families with anti-social children into intervention trials: lessons from the Helping Children Achieve (HCA) Study. *Journal of Children's Services*.

Stevens, M., Beecham, J. & the NAPR HCA team (2012). The Helping Children Achieve Trial: The costs of supporting children with behavioural problems, report submitted to the DfE.

Sutton, C. (1992) Training parents to manage difficult children: a comparison of methods. *Behavioural Psychotherapy*. 20:115-39.

Sylva, K. & Crook, C. (2000). SPOKES home literacy programme: Supporting Parents on Kids Education. Unpublished manual.

Sylva, K., Roberts, F., Beckett, C., Doolan, M., Scott, S., Kallitsoglou, A & Ford T., (2011) Factors associated with levels of reading in the HCA trial. Report to DfE NAPR/ King's College, London

Sylva, K., Melhuish, E., Sammons P., Siraj-Blatchford, I. & Taggart, B. (2010). *Early Childhood Matters: evidence from the Effective Pre-School and Primary Education project*. London, New York: Routledge.

Sylva, K., Price, J., Crook, C. & Roberts, F. (2010). The SPOKES Literacy Programme. Unpublished; University of Oxford, England.

Sylva, K., Roberts, F., Price, J., Doolan, M., Beckett, C. and Scott, S. (2010). *Teaching parents to support their children's reading: is it feasible?* Report to DfE. London: NAPR/King's College London.

Sylva, K., Scott, S., Totsika, V., Ereky-Stevens, K. & Crook, C. (2008). Training parents to help their children read: a randomised control trial. *British Journal of Educational Psychology*, 78, 435-455.

Taylor, E., Chadwick, O., Heptinstall, E. & Danckaerts, M. (1996). Hyperactivity and conduct problems as risk factors for adolescent development. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 1213-1226.

Taylor, E., Sandberg, S., Thorley, G. & Giles, S. (1991). The epidemiology of childhood hyperactivity. Maudsley Monographs, 33, New York: Oxford University Press.

Trzesniewski, K. H., Moffitt, E. T., Caspi, A., Taylor, A. & Maughan, B. (2006). Revisiting the association between reading achievement and antisocial behaviour: New evidence of an environmental explanation from a twin study. *Child Development*, 77, 72-88.

Waldfoegel, J. & Washbrook, E. (2008, June 1-3). *Early Years Policy*. Paper presented at the Sutton Trust-Carnegie Summit: Social Mobility and Education Policy, New York.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: strengthening parenting competencies. *Journal of Consulting & Clinical Psychology*, 66(5), 715-730.

Webster-Stratton, C. (1989). Systematic comparison of consumer satisfaction of three cost-effective parent training programmes for conduct-problem children. *Behaviour Therapy*, 20, 103-115.

Webster-Stratton, C., Reid, M. J. & Hammond, M. (2001). Preventing conduct problems, promoting social competence: a parent and teacher training partnership in head start. *Journal of Clinical Child Psychology*, 30(3), 283-302.

Weisz, J., Doss, A. & Hawley, K. (2006). Evidence-based youth psychotherapies versus usual clinical care: a meta-analysis. *American Psychologist*, 61, 671-689.

Whitehead, C., Stockdale, J. & Razzu, G. (2003). The Economic and Social Costs of Anti-Social Behaviour: a review. London: London School of Economics.

Ref: DFE-RR261

ISBN: 978-1-78105-202-0

© HCA

December 2012