

Research Report DFE-RR185b

# Helping Children Achieve: Summary of the study 2007-2010 Interim report

Celia Beckett, Angeliki Kallitsoglou, Moira Doolan, Tamsin Ford, Stephen Scott

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Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DFE).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.

## **Contents**

1. Aim of the study	<b>1</b>
2. Recruitment	<b>2</b>
Recruitment by the school based-screen population screen	<b>2</b>
Summary of findings from the screen	<b>10</b>
Recruitment by referral of individual children	<b>12</b>
3. Who took part in the main intervention study	<b>13</b>
Summary of who took part in the intervention study	<b>19</b>
4. Retaining families in the trial	<b>20</b>
5. Participation in the interventions	<b>22</b>
Summary of factors affecting continuation in the trial	<b>23</b>
6. Preliminary findings on the effectiveness of the intervention	<b>24</b>
Summary	<b>28</b>
8. Appendix	<b>29</b>
9. References	<b>30</b>

# 1. Aim of the study

The aim of the Helping Children Achieve (HCA) study is to compare the effectiveness of three evidence-based parenting group interventions and usual services to reduce the level of conduct problems and improve the literacy of children in Year 1 and Year 2 of infant school.

The programmes are:

- 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** (SPOKES) which is designed to improve parent's ability to support child reading development and improve child literacy;
- both programmes in combination **IY-SPOKES** (COMBI); or
- service as usual/'**Signposting**'.

The study is important theoretically because it enables an examination of what programmes are necessary to improve reading and behaviour. For example, does improving the child-parent relationship drive up reading? Conversely, does improving child reading improve child behaviour at home and at school? The results will have widespread significance for reducing poor life chances in children and helping families living in disadvantaged conditions.

The HCA study is being conducted in two contrasting local authorities. Hackney is a London borough with a diverse ethnic population. In the 2001 census, 44% people described themselves as White British, 15% in Other White ethnic groups, 25% Black or Black British, 9% Asian or Asian British, 4% described themselves as 'Mixed', and 3% as Chinese or Other. Of the resident population, 66% were born in the UK. Hackney is the most socio-economically deprived borough in England.

In contrast, in Plymouth 95% of the population is White British. Plymouth is 84th out of 152 local authorities for deprivation (Ref Encyclopaedia II, Demographics of Hackney, London Borough of Hackney).

## **2. Recruitment**

The recruitment into the trial, across both sites, is composed of two elements:

- Those recruited from the school screen of all children in the relevant years (3,122 children screened) and
- Direct referrals (262) that came from children's centres, social workers' and teachers' concerns, advertisements, information displays, etc.

Both groups completed the screening questionnaire. Drawing from both referral routes, screening data is available for 1,328 children in Hackney and 2,056 children in Plymouth.

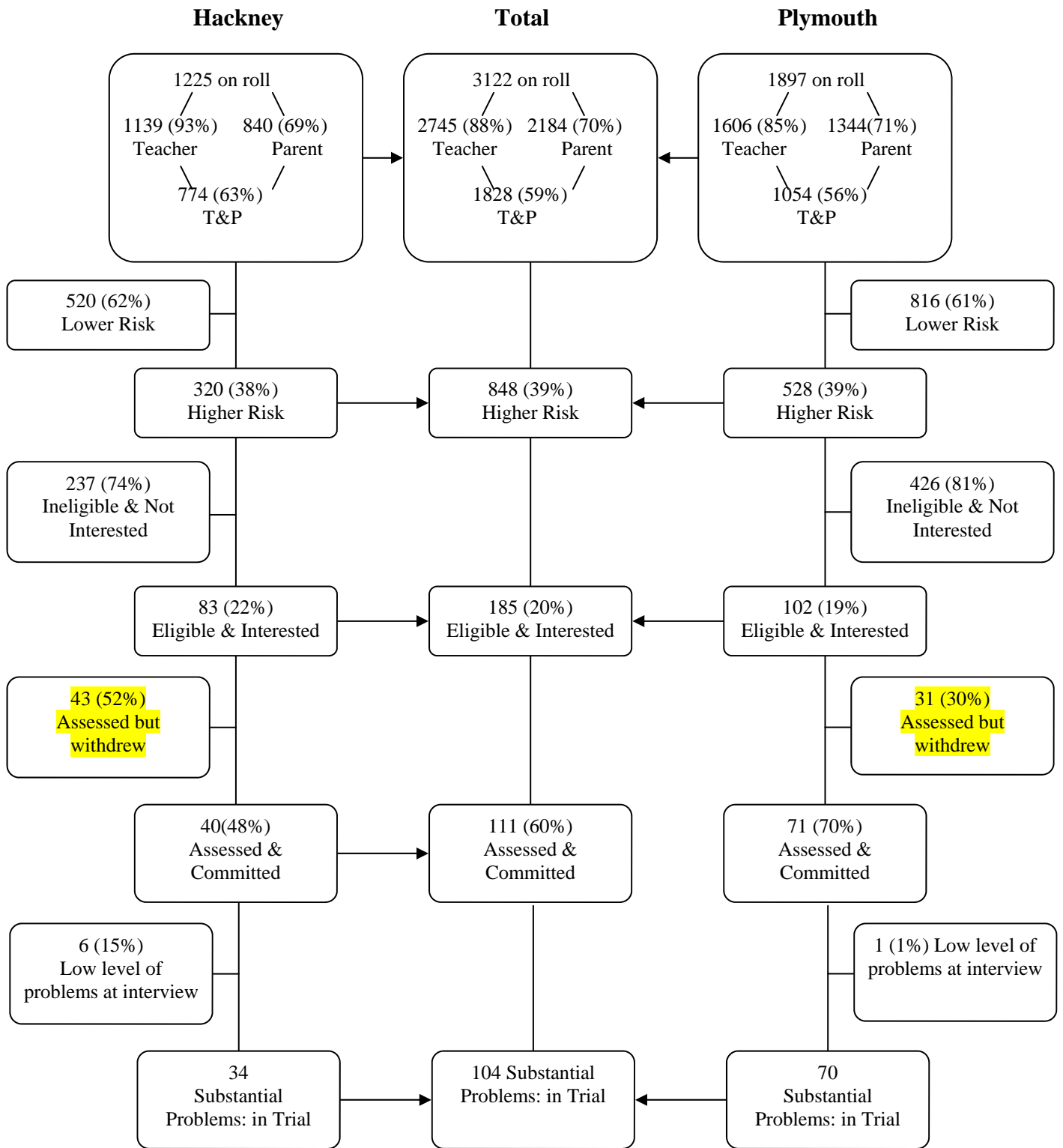
### **2.1 Recruitment by the school-based population screen**

The purpose of the screen was to evaluate the total population of children and then select those who were in need because they were at risk of developing conduct problems and associated poor outcomes such as poor school attainment.

The schools selected in Hackney were chosen because they were in the more disadvantaged localities, and comprised 11 of the 51 primary schools in the borough including 3 in the most deprived ward. Information from recent Ofsted reports confirmed that all 11 schools had a high proportion of ethnic minorities, speakers of English as a second language, children with learning difficulties and children in receipt of free school meals. Two of the schools had undergone changes in management imposed as a result of concerns about their failing performance.

The schools selected in Plymouth were 42 of the 71 primary schools and were chosen to be representative of the city. They included those from both inner city deprived areas and better-off areas, but also included some that had been experiencing major difficulties.

**Chart 1. Participant flow from the population screen in schools**



## **2.2 Procedure**

The evaluation questions used for the screen included the five questions from the conduct scale of the Strengths and Difficulties Questionnaire (Goodman, 2001) and the eight DSM-IV oppositional defiant behaviour items (American Psychiatric Association, 1994). Both were completed by parents and teachers.

To be included in the trial, a child had to reach the cut-off point of 3 or above on the SDQ, or 5 or above on the DSM-IV scale, on either parent or teacher screen (see Appendix for details).

Data was also collected from the parents as to whether their child had any special educational needs. In addition, both parents and teachers were asked to report on their child's reading ability and this was reported on a 6 point scale: 1 (cannot read yet) to 6 (reads very well).

## **2.3 Findings from the screen: comparison between sites**

Overall mean scores on the SDQ conduct scale in both Plymouth and Hackney, both by parents and teachers, were close to the population mean (1.4 for parent reports and .9 for teacher reports, Goodman, 2001) and there were no consistent differences between sites or reporter. Parent reports of conduct problems and oppositional defiant problems were slightly lower in Hackney than in Plymouth on both SDQ and DSM-IV. In contrast, teacher reports of conduct problems were slightly higher in Hackney than Plymouth on the SDQ, but not on the DSM-IV (see Table 1).

Peer problems also differed between the authorities but this was not consistent. Parents reported somewhat higher levels of problems in Hackney, but not teachers. Pro-social problems were higher in Hackney than in Plymouth, as reported by teachers, but not as reported by parents (Table 1).

Reading ability as reported by parents was lower in Hackney, but there were no differences between sites in the level of reading ability as reported by teachers.

**Table 1. Reported levels of conduct and oppositional defiant problems, prosocial and peer problems in children and perceived reading ability in Hackney and Plymouth**

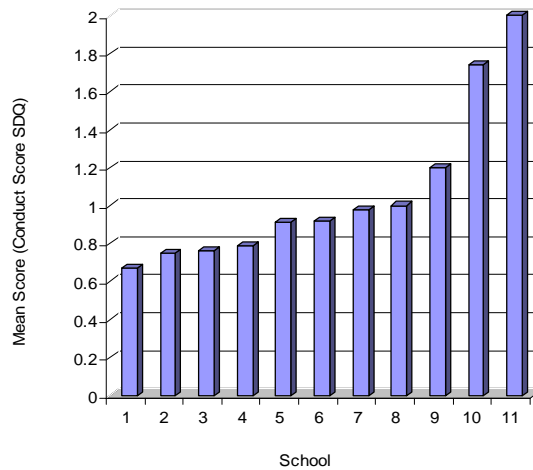
	Site	N	Mean (SD)	t
Total SDQ conduct parent Pop mean = 1.4	Hackney Plymouth	910 1472	1.57 (1.54) 1.91 (1.76)	-4.53, p<.001
Total SDQ conduct teacher Pop mean = .9	Hackney Plymouth	1171 1552	1.02 (1.64) .85 (1.49)	2.80, p<.01
Total Peer Parent Pop mean = 1.4	Hackney Plymouth	879 1419	1.87 (1.77) 1.64 (1.68)	.97, n.s.
Total Peer Teacher Pop mean = 1.4	Hackney Plymouth	1170 1558	1.31 (1.63) 1.29 (1.64)	-.23, n.s.
Total pro social parent Pop mean = 8.6	Hackney Plymouth	888 1443	8.12 (1.78) 8.19 (1.79)	1.12, n.s.
Total pro social teacher Pop mean = 7.3	Hackney Plymouth	1169 1482	6.85 (2.61) 7.45 (2.34)	-5.35, <.001
Total DSM parent	Hackney Plymouth	674 1393	3.38 (2.89) 4.03 (3.56)	-3.19, p<.001
Total DSM teacher	Hackney Plymouth	962 1543	1.81 (2.97) 1.74 (3.01)	.85, n.s.
Reading ability parent	Hackney Plymouth	723 1246	3.61 (1.54) 4.19 (1.33)	-8.42, p<.001
Reading ability teacher	Hackney Plymouth	957 1118	4.11 (1.76) 4.04 (1.67)	.92, p=.360

## 2.4 Variation between schools in levels of reported problems

Whilst most schools reported levels of conduct problems around the norm, there were two schools in Hackney whose teachers reported a markedly higher level of conduct problems; both (school 10 & 11) had been taken into special measures before the screen had taken place. The level of conduct problems reported by the teachers in the three schools from the most deprived ward in Hackney was not elevated relative to the norm.

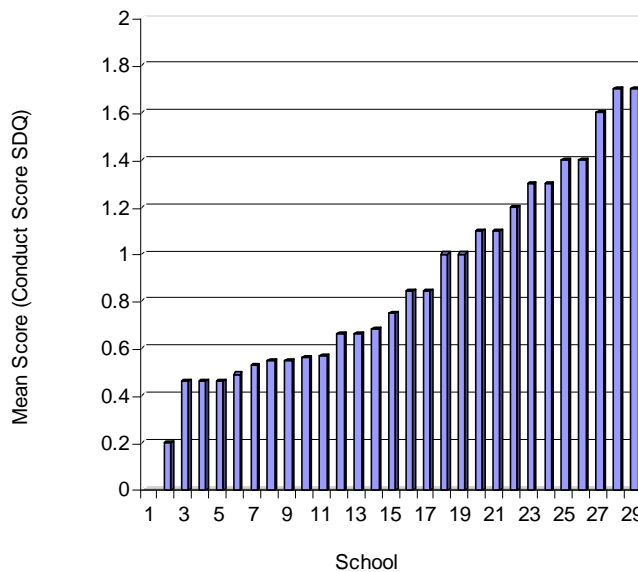


**Figure 1. Teacher report of conduct problems in Hackney**



In Plymouth the majority also reported levels of conduct problems at the norm, although the range of scores was slightly wider. In both areas there were also schools reporting lower than average levels of problem behaviour.

**Figure 2. Teacher report of conduct problems in Plymouth**

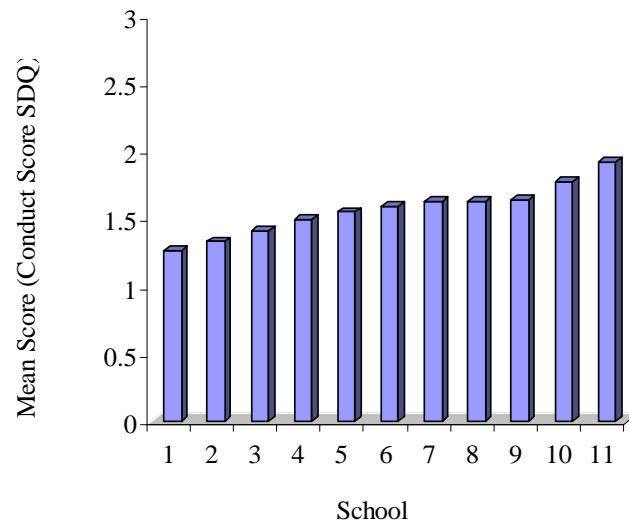


\* schools only included if there were more than 20 questionnaires completed

## 2.5 Parent reports

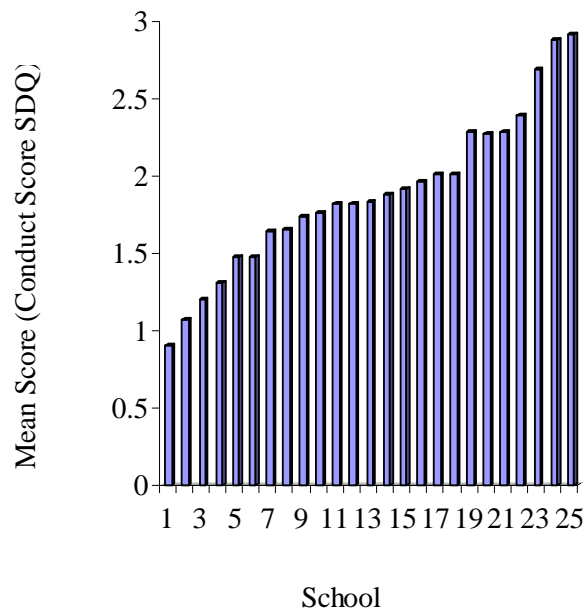
There was also variation in parent reports of conduct problems according to school with one of the schools in the most deprived ward in Hackney (school 11) having the highest level of conduct problems with levels that were higher than the population mean of 1.4 (see Fig 3).

**Figure 3. Parent report of conduct problems in Hackney**



Parent reports of conduct disorder were higher in Plymouth where 11 schools had parents reporting mean levels of conduct problems of  $\geq 2$ , see Fig 4.

**Figure 4. Parent report of conduct problems in Plymouth**



## 2.6 Did parent and teacher agree as to who had conduct difficulties?

There was a modest correlation between parent and teacher report of conduct difficulties,  $r = .28$  in Hackney and  $.37$  in Plymouth. More than twice as many parents of children scoring above the screen cut-off reported that their children had moderate or greater difficulties than teachers (88% versus 30%), but for some (12%) only the teacher reported a problem. This difference between reporters resulted in a higher proportion reaching the screen cut-off than would have been the case if they reported the same children as having difficulties. This difference would be anticipated as generally parents report higher level of problems than teachers (Goodman, 2001).

Examined categorically, this meant the children who were eligible for the trial were more likely to be those whose parents considered that there was a problem, but a few were invited into the trial as a result of only the teacher expressing concern. This is likely to be an advantage in recruiting parents for interventions, as our experience to date suggests that if parents themselves are not concerned, then recruitment into the trial and attendance at the intervention is less successful.

## **2.7 Special needs**

The data on the special needs of the children reported by the parents provided a broad outline of the proportion of children who were in receipt of additional help, but not the reasons for the help.

Parents reported that 18% of the sample was in receipt of some additional help either in the classroom or with additional small groups or teaching assistant support. All the children were in mainstream education. The data indicated that there were some differences in the proportion of children in receipt of additional help in the two sites with more children from Hackney in receipt of additional help (22% versus 19% in Plymouth, Pearson's  $r = -.04$ ,  $p < .05$ ). It also indicated that those who were eligible for the trial who had a higher level of conduct difficulties were also more likely to be in receipt of additional help at school than those without conduct difficulties (25% of those who reached the screen cut-off having special needs and 17% of those not reaching the screen, Pearson's  $r = .10$ ,  $p < .001$ ).

## **2.8 Perceived reading difficulties**

There were no differences in the levels of reported perceived reading difficulties between the two sites according to teachers ( $t(1,415) = 1.39$ ,  $p = .07$ ) although there was a trend for teachers in Hackney to report fewer problems. Parents in Hackney, however, were more likely to report that the children had greater reading difficulties than in Plymouth ( $t(1,321) = 8.30$ ,  $p < .001$ ). Again there were no consistent differences.

Levels of perceived reading difficulties reported by teachers and parents were correlated with reports of conduct problems. This correlation was similar in the 2 sites ( $r = .26$ , for teachers,  $r = .16$  for parents in Hackney and  $r = .29$  &  $r = .19$ , respectively in Plymouth, all  $p < .05$ ). Those who reached the criteria for the trial on behavioural criteria were more likely to have perceived reading difficulties than those who did not according to both parents ( $t(1,655) = 5.14$ ,  $p < .001$ ) and teachers ( $t(1,117) = 6.84$ ,  $p < .001$ ). 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.

## **2.9 Gender effects**

Conduct problems were higher amongst boys in both sites according to teachers ( $t(2,581) = -8.10$ ) and parents ( $t(2,130) = -4.17$ ) and perceived reading difficulties were also higher for boys according to teacher ( $t(1,931) = -6.22$ ,  $p < .001$ ) and parent reports ( $t(1,767) = 4.15$ ,  $p < .001$ ).

## **2.10 Ethnicity/ English as a first language**

The diversity in Hackney found by the screen reflected the evidence from the Ofsted reports about the specific schools selected. In comparison with Hackney as a whole (where 44% of the population are White British) there were only 27% children from a White British background. There was very limited variation in ethnicity in Plymouth with more than 96% White British.

The definition of ethnicity in Hackney was reduced from 24 into 7 main categories (White British, Black British, Black African, Turkish, White Other, Mixed Other and Asian. See Table 3 for details) and information was also gathered on whether English was the first language spoken at home.

Only modest differences were found in conduct problems between ethnic groups and these differences were not consistent between parent and teacher reports. Parents who described themselves as Turkish reported higher rates of child oppositional problems on DSM-IV scales than the other groups ( $F(6,571) = 2.34, p < .05$ ) but teachers reported higher levels of oppositional problems on the DSM-IV scales ( $F(6,561) = 2.40, p < .001$ ) for Black British and Black African children, relative to Asian and White British children. There were no consistent findings for parent reports on the SDQ ( $F(6,629) = .97, p = .442$ ) nor the teacher SDQ reports ( $F(6,576) = 1.56, p = .16$ ) and ethnicity.

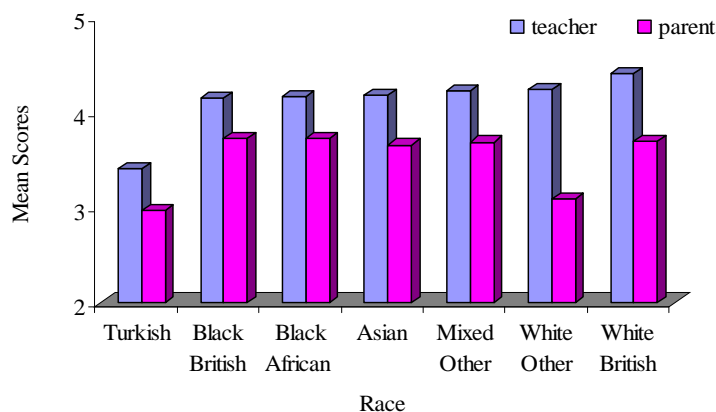
## **2.11 Perceived reading ability English as a first language and ethnicity**

There were differences in the perceived reading ability of children whose first language was not English according to both parent ( $t(718) = -4.14, p < .001$ ) and teacher report ( $t(721) = -3.16, p < .01$ ). The children who did not speak English at home were no more likely to have conduct difficulties than those who did speak English according to parent or teacher reports with  $t$  values ranging from .08 to .91, none significant.

However, there was a modest significant difference in the perceived reading ability of the children from Turkish backgrounds relative to all the other groups as reported by parents ( $F(6,602) = 3.42, p < .01$ ) and teachers ( $F(6,580) = 2.39, p < .05$ ). When these results were controlled for whether the families spoke English at home, this result was no longer significant for teacher reports ( $F(6,579) = 1.69, p = .120$ ) or parent reports ( $F(6,601) = 1.77, p = .103$ ) (see Figure 5).

Parents, but not teachers, from Other White (mostly European) backgrounds also reported that their children had greater difficulty in reading ( $F(6,629) = 3.70, p < .001$ ) but this was also no longer significant when controlled for whether English was a second language ( $F(6,635) = 1.88, p = .083$ ).

Figure 5. Perceived reading ability and ethnicity: teacher and parent report



## Summary of findings from the screen

- The study demonstrates that it is possible to conduct population screens in very deprived, multi-ethnic areas and to get high rates of return. This is the largest survey ever of primary school age children’s behaviour problems in inner-city areas in the UK
- The mean levels of conduct problems amongst 5-7 year-olds in Hackney and Plymouth were similar and were similar to the national norms. Any variation was not consistent between site and reporter. Using these measures, inner-city primary schools serving a deprived neighbourhood do not have elevated levels of behavioural problems. The rate of conduct problems found in a predominately multi-ethnic neighbourhood was not higher than in a more traditional White British area. Thus the notion that deprived, inner-city areas have primary schools that are full of badly behaved pupils is not supported by the evidence.
- Whilst teachers from most schools in Hackney and Plymouth reported child behavioural problems that were close to the population norm, there was a large range with some schools reporting well below and some well above the average scores. In part, the schools with poorer reported behaviour were those that were failing or judged to be badly managed. This suggests that poor management doesn’t just affect teachers but also leads to a disruptive milieu for the pupils which is likely to lead to poorer social, as well as educational attainments.
- 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.

- **There was no consistent association between conduct problems and ethnic minority status in this sample. Again, this gives the lie to some prejudices.**
- **Both parents and teachers reported lower perceived reading ability for children where English was not spoken at home. Many in this study were from a Turkish background and some were from other ethnic backgrounds. The parent-led SPOKES reading programme is likely to be especially relevant to enable this group to catch up and not fall behind.**
- **The relatively low level (one fifth) 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, This is being studied further to see whether this was because they were too busy because of work commitments, or didn't want any help, or would like help but didn't find the intervention appealing. 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 a higher proportion enrol.**

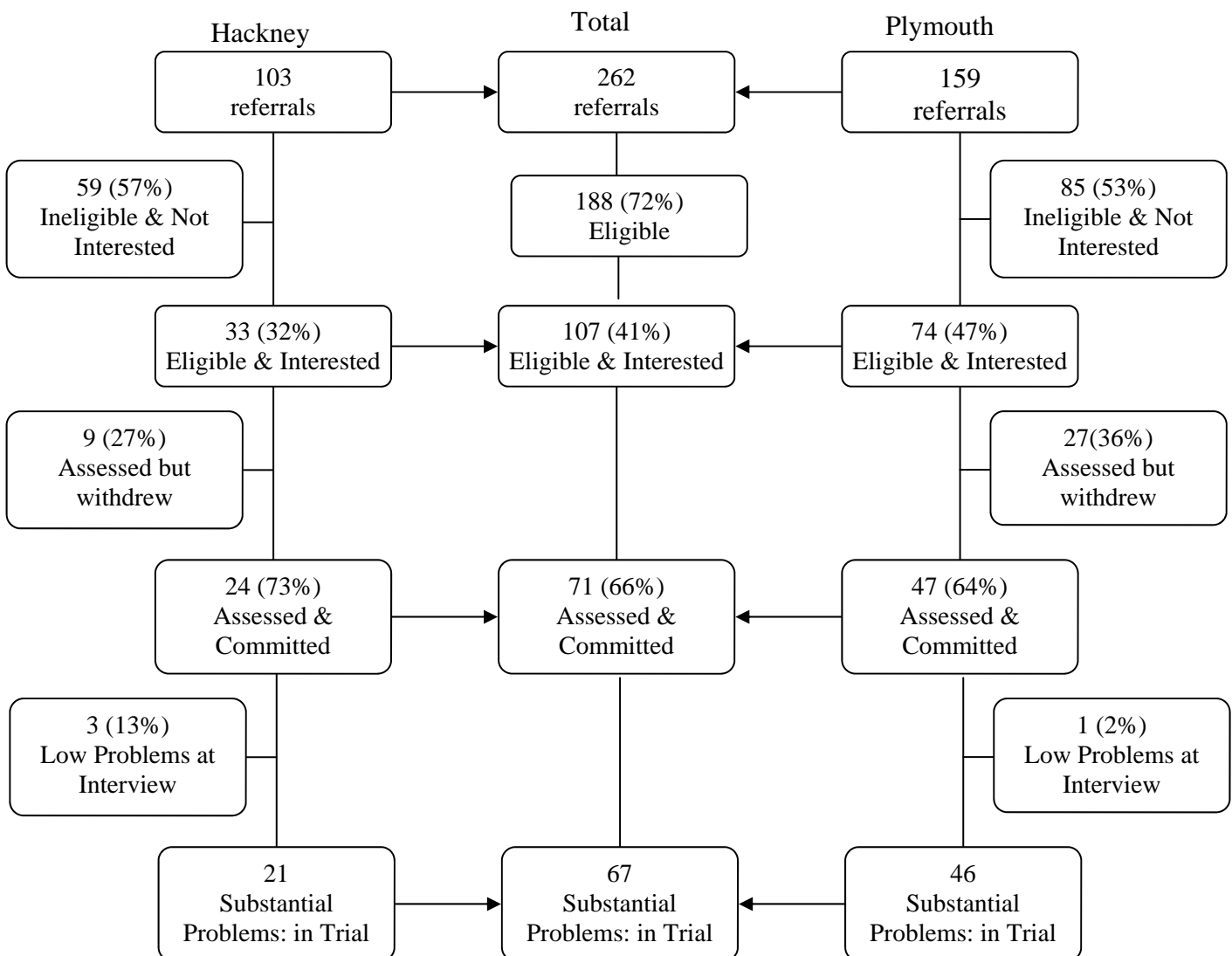
## 2.12 Recruitment by referral of individual children

In addition to recruitment to the trial from the population screen, families were also recruited to the study by referrals (263 families: 104 in Hackney and 159 in Plymouth).

Referrals from parents were invited by advertisements, flyers and leaflets in schools. Schools also referred parents of children about whom they had concerns who were believed to be willing to take part.

The level of difficulty of the children who were referred, as revealed by the same evaluation questions, was significantly higher than that of those who were screened and 59% were eligible for the study (compared to 9% from the screen). Referrals came from a similar range of ethnic backgrounds in Hackney as in the screen (e.g. with 21% from White British background referred, in contrast with 25% of those in population screen).

**Chart 2. Participant flow from referrals**

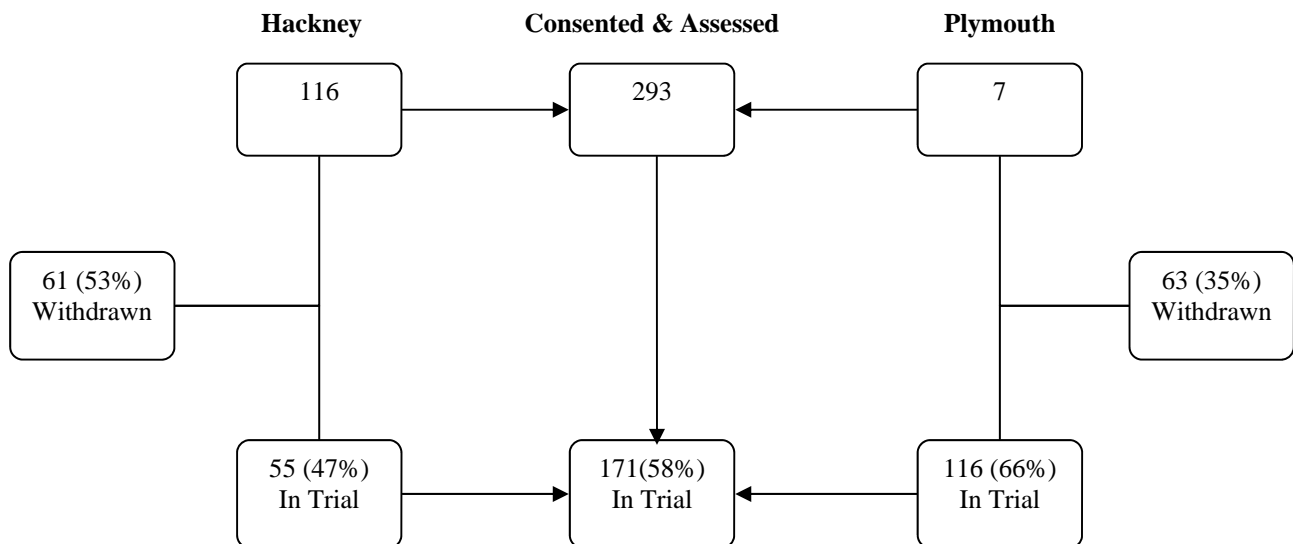


### 3. Who took part in the main intervention study?

Children were excluded from the study if they had marked developmental delay or autistic symptoms. In addition, families were excluded if it was found that the level of behavioural difficulties as assessed on the Parent Account of Child Symptoms, Disruptive Behaviour interview (PACS; Taylor et al., 1991) was below the population mean level for disruptive behaviour. 11 families were excluded on these grounds.

In addition to children meeting the screen level for child conduct problems, families had to be available on days when the parent groups were offered and be able to speak good enough English to participate in the intervention. The inclusion criteria meant that some non-English speaking parents could not participate and this had an impact on recruitment in Hackney. These parents were offered other parent programmes either in their native language or with interpreters, but outside the study because of concern about the impact that multiple interpreters might have on the interventions. The impact on interpreters on the effectiveness of the intervention is worthy of separate study, as the provision of services for these families is an important public health issue. All families who met criteria for the study were invited to participate (see Chart 3 for details). Although they consented originally many families subsequently withdrew.

**Chart 3. Consented cases from both recruitment strategies across sites**





### 3.1 Who agreed to take part?

Children whose families were recruited from the screen and subsequently withdrew from the study had similar levels of difficulty as rated by parents, but more severe as rated by the teacher. For those referred there was insufficient data from teachers to study the rates of behaviour so it is only presented for parents. The rate does not differ, however, according to those who took part or not. Thus, we can be confident that those recruited into the trial do not differ from those who did not participate in terms of the severity of their child's disruptive behaviour. The rate was higher in Hackney (over half) than Plymouth (under a third). The impression of the researchers was that this was because parents had busier lives in Hackney, but this is being further studied.

**Table 2. SDQ and DSM-IV scores for parents who did or did not consent to the study**

	Screened			Referred		
	Consented Mean (SD) n=185	Did not consent Mean (SD) n=630	t	Consented Mean (SD) n=108	Did not consent Mean (SD) n=97	t
Mean SDQ conduct parent (Pop mean =1.4 Goodman, 2001)	3.06 (1.62)	2.83 (4.16)	=1.76, n.s.	3.90 (2.00)	3.99 (1.74)	=.95, n.s.
Mean SDQ conduct teacher (Pop mean = .9 Goodman, 2001)	1.71 (1.87)	2.18 (2.19)	=2.74 p<.05			
Mean DSM-IV parent	6.21 (3.14)	6.01 (2.96)	=.76, n.s.	8.74 (3.34)	8.27(3.25)	=.32, n.s.
Mean DSM-IV teacher	3.31 (3.76)	4.17 (4.16)	=2.28 p<.05			

## **Demographic factors**

Those who consented to take part were no more likely to be from one particular ethnic group than another (Pearson's  $r = -.03$ ). This is an important finding as it shows that the intervention was appealing equally to those from minority ethnic groups and cultures. However, those who took part in the trial were slightly less likely to be those for whom English was a second language (Pearson's  $r = .16$ ,  $p < .01$ ), see Table 3 for more detail of ethnicity and participation. The proportion of girls and boys whose families took part reflected the distribution in the overall sample of those who reached the screen cut-off (45% girls versus 55% boys).

### **3.2 Comparison of social demographic factors across sites**

#### **Ethnicity/ English as a second language**

The profile of the participants in the two areas was very different with only 27% of those participating in the trial being White British in Hackney and 96% in Plymouth (see Table 3 for details of ethnic minorities in Hackney). The proportion of the participants who did not speak English at home in Hackney was 20%, while only 4% in Plymouth.

#### **3.3 Single parents**

The proportion of participants in single parent families was slightly higher in Hackney (45% compared with 34%), but this difference did not reach significance, as shown in Fig 6 below.

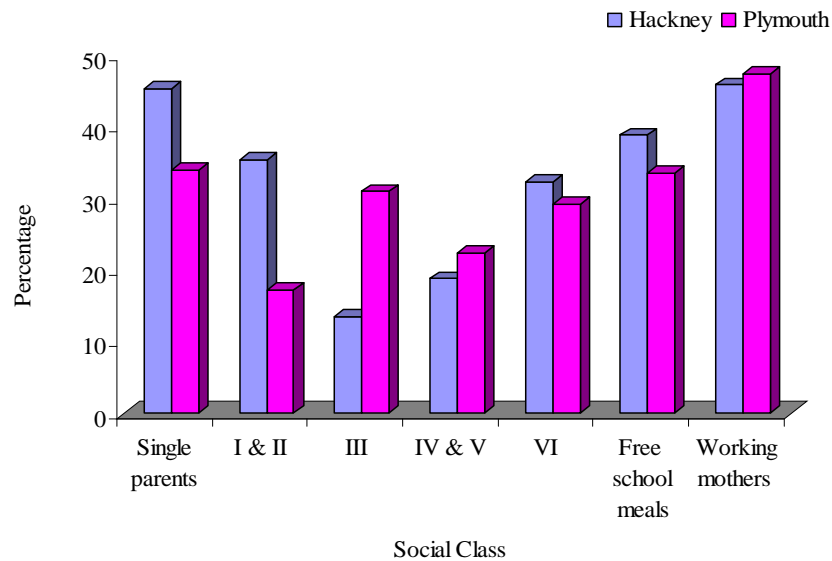
#### **3.4 Social class**

Social class was categorised according to the ONS SES categories, but because of an uneven distribution these were grouped into 5 groups (I/II, III, IV/V & VI, unemployed).

For families who consented to the study, social class differences were found between Hackney and Plymouth (Pearson's  $r = 14.29$   $p < .01$ ). More families in social class I and II consented to the trial in Hackney, but more families in social class III agreed to take part in Plymouth.

The same numbers of disadvantaged families took part in both sites; approximately half were in social class IV, V or unemployed (see Figure 6 below for details). Despite the very deprived neighbourhoods represented in this trial, the schools in Hackney are also the catchment areas for young professional families living in affluent streets alongside the deprived areas.

**Figure 6. Parents' social class in Hackney &**



### 3.5 Plymouth

#### 3.5.1 Free school meals

The proportion of children in receipt of free schools meals was roughly the same in both authorities as shown above in Figure 6. There was also no difference between the sites in the proportion of mothers who were working.

#### 3.5.2 Ethnicity

The proportion of families consenting to the trial in Hackney represented the ethnic mix in the community (see Table 3 below). There were no associations between ethnicity and social class with half of the participants in social class I or II being from an ethnic minority (Pearson's  $r = .15$ ,  $p = .16$ ).

#### 3.5.3 Child conduct problems and socio-demographic factors

There was a very modest correlation between social class and conduct problems as reported by the parents on the SDQ ( $r = .15$ ,  $p < .05$ ) but not reported by teachers on the SDQ ( $r = .14$ ,  $p = .07$ ) or on the DSM-IV scales by either parent ( $r = .08$ ,  $p = .28$ ) or teachers ( $r = .06$ ,  $p = .55$ ). There were also no differences in the disruptive behaviour as measured on the PACS, Disruptive Behaviour scale in relation to social class ( $F(3,188) = 1.08$ ,  $p = .360$ ).

No associations were found between parent or teacher reports of conduct problems on the SDQ or the intensive PACS and whether they had free school meals. Working

mothers did not report children with higher levels of behavioural difficulties ( $t(192) = 1.32, p = .189$ ).

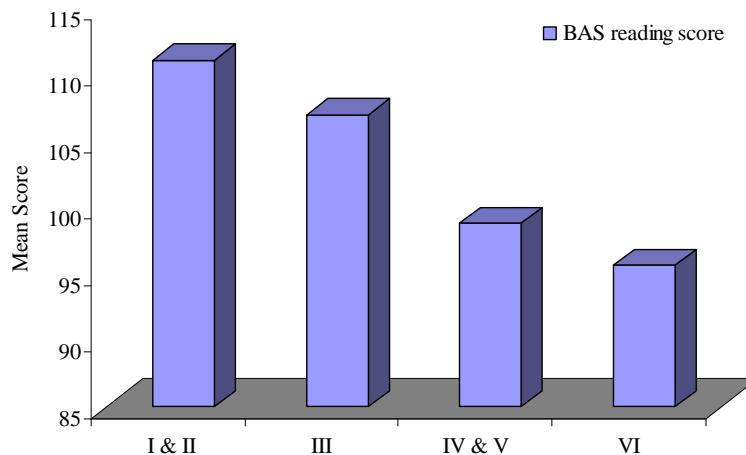
### 3.5.4 Gender

Although in the wider screen data there was an association between gender and conduct problems there were no differences according to gender in the group selected for the trial.

### 3.5.5 Child reading attainment and socio-demographic factors

There were marked significant differences in the child reading scores according to social class ( $F(3,166) = 8.54, p < .001$ ) with those in classes I and II having scores on the British Ability Scale - II (BAS-II; Elliot, Smith, & McCulloch, 1996) 15 points higher than those from families where parents were unemployed (range 95.82 to 111.20).

**Figure 7. BAS standardised reading scores according to social class**



There were no differences between the sites in reading ability: BAS scores of 103.85 (SD = 17.77) in Hackney and 101.83 (SD = 16.81) in Plymouth and the differences between social class and reading were significant in both sites Hackney ( $F(3, 63) = 2.89, p < .05$ ) and Plymouth ( $F(3,102) = 6.26, p < .01$ ).

### 3.5.6 Free school meals

Families in receipt of free school meals were also more likely to have children with lower reading ability ( $t(172) = 41.12, p < .001$ ) but when controlled for social class this was no longer significant ( $F(1,165) = 3.07, p = .08$ ).

### **3.5.7 Working mothers**

Working mothers had children with higher reading levels than those who did not work ( $t(169) = -2.39, p < .001$ ). However, when this outcome was controlled for social class it was no longer significant  $F(1,163) = .08, p = .783$ , with working mothers tending to be in a higher social class.

### **3.5.8 Gender**

There was no association between gender and reading ability in the group who had been selected because of their conduct difficulties ( $t(177) = -.28, p = .78$ ); mean BAS scores for boys ( $n=80$ ) = 103.24 (17.91); girls ( $n=99$ ) = 101.73 (16.22).

### **3.5.9 Association of reading difficulty and conduct problems**

There were no associations between reading difficulty and conduct problems in the group of participants  $r = -.01$ , so whereas there had been a threshold effect for those who reached the screen criteria this was not a continuous effect.

## Summary of who took part in the intervention study

- **Involvement:**  
Those who consented to take part in the trial from the screen did not differ from those who did not engage in levels of behavioural difficulty for either those screened or who came from referrals. Therefore the study was successfully involving children with substantive problems and not selecting children with less risk, or in other words the 'worried well'.
- **Differences between sites:**  
There were some social class differences between Hackney and Plymouth with more families from social class I and II taking part in the trial in Hackney and more from social class III in Plymouth. This reflected the social mix of the area, and was not because of biased engagement rates. The proportion from lower social classes was the same and importantly, the trial recruited families from across the range of social class making our results generalisable to England and Wales. There were no differences in the proportion of single parent and working mothers. The major difference between the two sites was in ethnicity.
- **Child conduct problems and socio-demographic factors:**  
There were no associations between social class, free school meals, single parents and working mothers or with the gender of the child and the level of conduct difficulties within those who consented to take part. This is because taking only cases above the screen cut-off removed the association of behaviour problems with these factors found in population-based studies.
- **Reading attainment and socio-demographic factors:**  
Child reading attainments were strongly associated with social class.

## 4. Retaining families in the trial

### 4.1 Families who dropped out of the study or who were found to be ineligible

Forty per cent of families who consented to the study (119 of the 293 families) (see Chart 3), dropped out before randomisation or at the start of the parent group, because of time commitments and lack of commitment to the programme, or were found to be ineligible.

Families were statistically more likely to drop out in Hackney than in Plymouth with 53% dropping out in Hackney and 35% in Plymouth (Pearson's  $r = .18$ ,  $p < .01$ ).

### 4.2 Did the families who remained in the treatment differ from the families who dropped out?

The families who stayed in the trial did not differ in terms of social class (Pearson's  $r = .08$ ) or whether they were single parents (Pearson's  $r = .07$ ) or working mother (Pearson's  $r = .08$ ) or in ethnicity (Pearson's  $r = .08$ ), but there was a tendency for those not in receipt of school meals to continue in the trial (Pearson's  $r = .13$ ,  $p = .07$ ) and for some of the families whose first language was not English to withdraw, (Pearson's  $r = 3.83$ ,  $p = .05$ ).

It suggests that it may be more challenging to maintain the involvement of some families whose first language is not English and who may also have greater difficulty in engaging in the parenting programmes. However the White Other group (largely Eastern European) seemed to be more willing to engage. This suggests that the reasons for engagement were not only about language barriers but might also involve other cultural factors such as parental educational levels.

**Table 3. Ethnicity of participants in Hackney**

	% in population	% met screen criteria	% consented to trial	% stayed in trial
White British	27% (n=227)	25% (n=81)	27% (n=28)	24% (n=11)
Black British	18% (n=153)	20% (n=66)	20% (n=19)	17% (n=8)
Black African	13% (n=106)	13% (n=44)	10% (n=14)	11% (n=5)
Asian	14% (n=118)	12% (n=39)	14% (n=15)	13% (n=6)
White Other	8% (n=69)	8% (n=26)	7% (n=9)	13% (n=6)
Mixed Other	11% (n=93)	12% (n=38)	16% (n=18)	17% (n=8)
Turkish	8% (n=72)	10% (n=33)	6% (n=6)	2% (n=1)

### **4.3 Association between continuing participation and level of behavioural difficulty**

The families who dropped out were also more likely to be those whose children had fewer behavioural difficulties as assessed on the PACS, Disruptive Behaviour interview (mean score of those still in the trial = 1.40; mean score of those who have withdrawn = 1.17 ( $t(148) = 3.03, p < .01$ ), suggesting that (appropriate) lack of parental concern contributed to drop out in some cases.

Those who stayed in the trial were also more likely to be those who were referred (Pearson's  $r = .15, p = .05$ ), which again is not surprising as it suggests a higher level of concern and some preparation or rehearsal with the parent for the need for intervention. This may be an important point to consider when planning the implementation of these kinds of interventions. There was no association with the level of reading difficulties and staying or leaving the trial ( $t(177) = -.26, p = .80$ ).



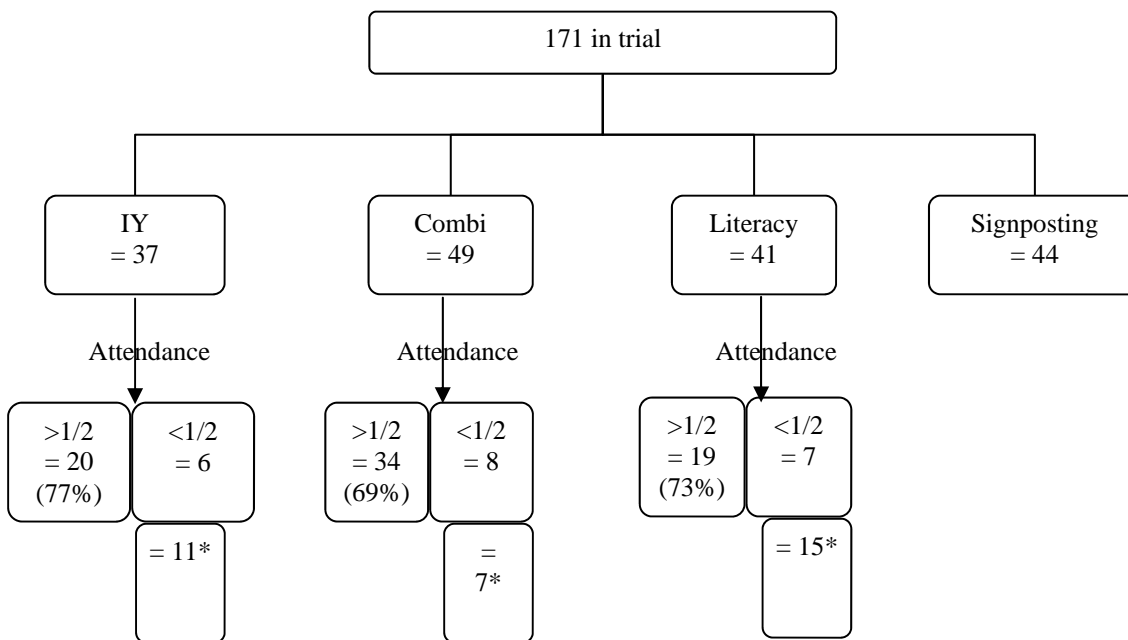
## 5. Participation in the interventions

Of the 171 families who remain in the trial, 124 have attended at least one session of the intervention or are in the Signposting. The other 47 are currently starting courses this autumn. They have been randomized to the four different parent group interventions: the Incredible Years; the SPOKES reading programme; a combined SPOKES-IY programme or Signposting to existing services.

The interventions have been running for eight terms in Hackney and five terms in Plymouth and in total 127 families have attended or are attending courses with another 44 participants in the Signposting arm.

Although there is a high rate of drop out prior to the parent groups starting once parents start to attend the attendance rates are very high with 77% attending more than half the course.

**Chart 4. Attendance at interventions (including those currently in attendance)**



*\*currently attending intervention*

### Future Plans

The research team intends to recruit for one final round of intervention courses run in January 2011 to take the total number of participants to 200 + so that there will be a minimum of 50 in each arm of the trial.

## **Summary of factors affecting continuation in the trial**

- **Interventions attract a wide range of participants, representative of the neighbourhood from which they are screened. As conduct problems in young children are not found in this study to be associated with social class, the interventions are likely to appeal to a range of families who are experiencing difficulties. Although there is a high rate of drop out from the study this is not related to demographic factors other than the difficulties of English being a second language. It probably relates mostly to the constraints of being a research programme, leading to a lack of flexibility on the days on which interventions can be provided, etc.**
- **Families who do not speak English at home are less likely to engage in the study, and more work is needed in future to engage these groups.**
- **There is a marked association of social class with reading ability in both sites.**
- **The families who stay committed to the interventions tend to be those whose children have the greatest level of conduct difficulty and who may therefore have the most to gain from the intervention.**
- **In rolling out the intervention there is a need to target the literacy interventions for the socio-economically disadvantaged and those with English as a second language as they read less well.**

## 6. Preliminary findings on the effectiveness of the interventions

### 6.1 Statistical analysis

The aim of the present analysis was to examine the differences between groups at 12 weeks post randomisation, on the following rating scales:

- conduct problems (SDQ CP/DSM-IV ODD)
- severity of parent defined problems
- parent reported reading ability, and
- parental confidence in managing behaviour

We present the between group differences as a change in the groups' rating scores pre intervention, to 12 weeks, immediately post intervention. At this stage, those in the COMBI group have only attended the behavioural component of the parenting programme, and the COMBI and IY groups are therefore merged. At post assessment (6-9 months post randomisation) we will look at the 3 intervention groups and contrast them with the COMBI group but to date, too few post-assessments have been conducted to make such an analysis meaningful.

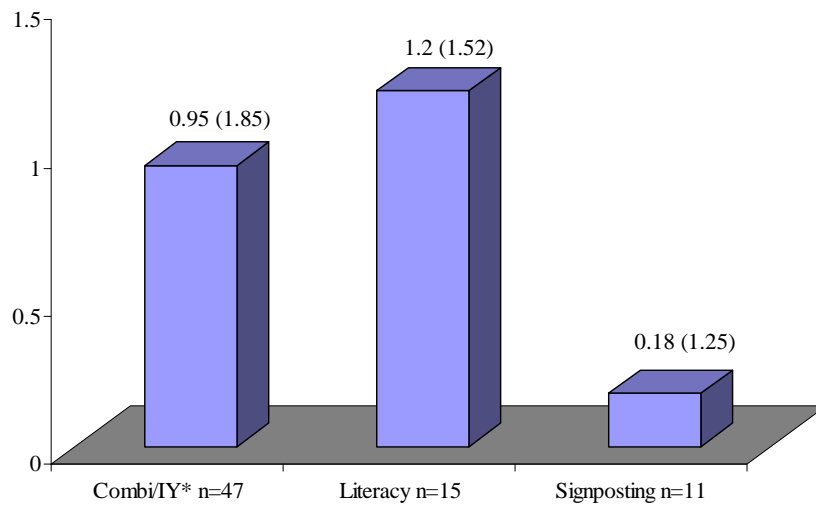
In order to assess the magnitude of the differences between the intervention and the Signposting groups, we used the average difference of the intervention groups from the Signposting group expressed as effect size  $d$ . The effect size  $d$  indicates the difference between scores of the intervention groups, from those of the Signposting group, in terms of standard deviations. It can be interpreted as follows: large = 0.8, medium = 0.5 and small = 0.2 (Cohen, 1977).

### 6.2 Child behaviour problems

#### **Strengths and Difficulties Questionnaire, Conduct Problems (SDQ CP) & DSM-IV Oppositional Defiant Disorder (ODD)**

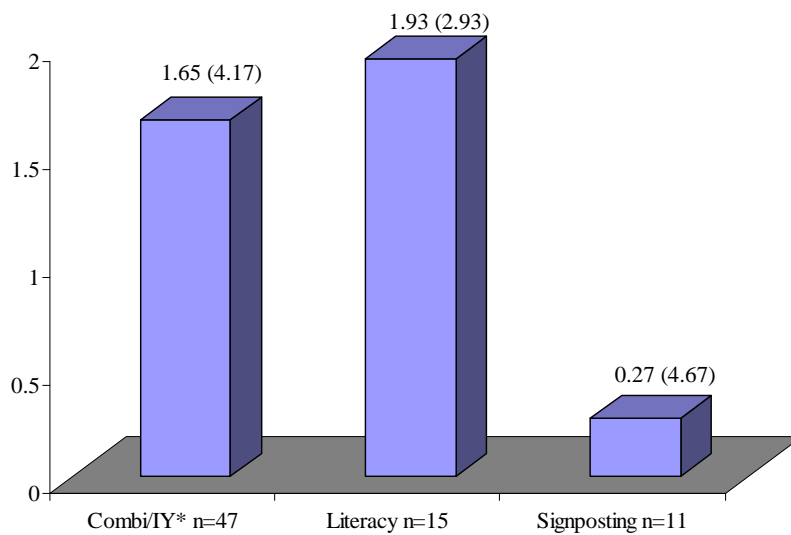
In all of the intervention groups, a large effect size was found for reduction of child conduct problems, as measured by the SDQ, in relation to the Signposting group. (Mean  $d = 0.61$ ). Child conduct problems reduced to normal levels, as measured by the SDQ. A reduction in child conduct problems, of a medium effect size, was also found on the DSM-IV ODD (Mean  $d = 0.37$ ).

**Figure 9. Mean (SD) change in SDQ Conduct Problems from pre to 12 weeks post intervention**



\* Groups are combined, as parents allocated to Combi had not yet attended the literacy component

**Figure 10. Mean (SD) change in DSM-IV Oppositional Defiant Disorder from pre to 12 weeks post intervention**

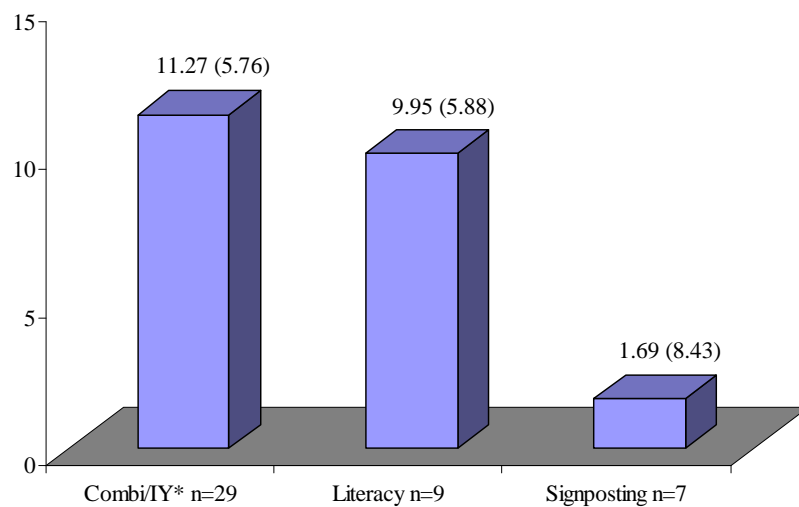


\* Groups are combined, as parents allocated to Combi had not yet attended the literacy component

### 6.3 Severity of parent defined problems

Change in severity of parent defined child major problems, as measured by the Visual Analogue Scale is displayed in Figure 11. Severity is measured on three scales each ranging from 1 to 10 (1= not a problem – 10 = couldn't get any worse). Ratings on three scales are summed up and yield a total intensity rating score with a range from 1 to 30. A very large difference was found between Signposting and intervention groups (effect size of Mean  $d = 1.25$ )

**Figure 11. Mean (SD) change in severity of parent defined problems from pre to 12 weeks post intervention**

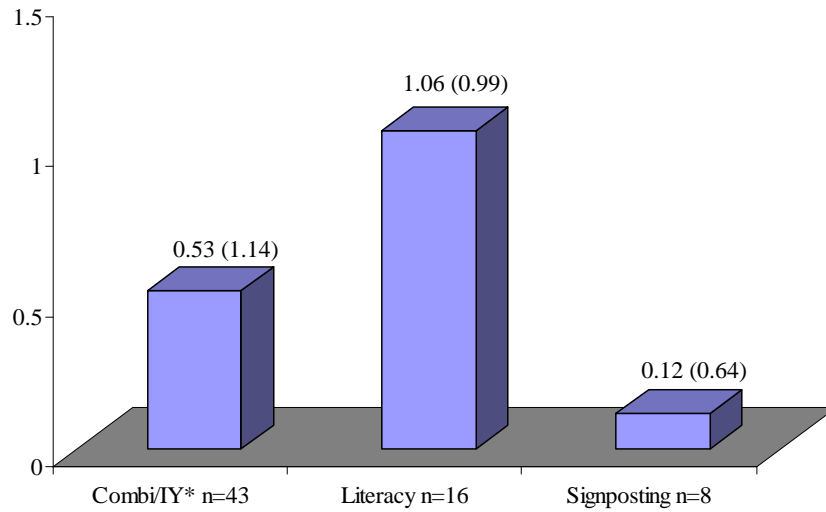


\* Groups are combined, as parents allocated to Combi had not yet attended the literacy component

### 6.4 Parent reported child reading ability

Parents' ratings of their child's perceived reading ability differed between groups. The ratings of all the intervention groups increased by half a point or more at 12 weeks, immediately post intervention. Children whose parents attend the SPOKES Literacy group were rated as having made the largest improvement. The mean effect size of the change in the intervention groups' scores as compared to the change in the Signposting group's score was large (Mean  $d = 0.68$ ). Also, the effect size difference between the COMBI/IY group and the Literacy group was  $d = 0.50$ , showing that the Literacy intervention was having a specific effect.

**Figure 12. Mean (SD) change in parent reported reading ability from pre to 12 weeks post intervention**

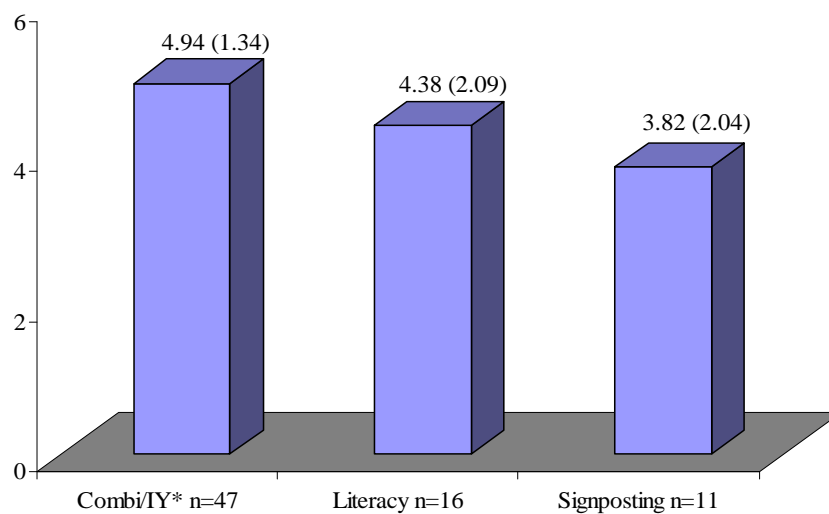


\* Groups are combined, as parents allocated to Combi had not yet attended the literacy component

### 6.5 Parental confidence in managing child behaviour

Parental confidence in managing behaviour at 12 weeks, immediately post intervention, increased in the intervention groups, compared to the Signposting group (see Figure 13). On average, the magnitude of the difference between the confidence ratings of the intervention groups as compared to the ratings of the Signposting group was medium (Mean  $d = 0.46$ ).

**Figure 13. Mean (SD) ratings of confidence in managing child behaviour at 12 weeks post intervention**



\* Groups are combined, as parents allocated to Combi had not yet attended the literacy component

## 6.6 Limitations

The sample size of the present analysis is relatively small. A larger sample may change the pattern of differences. As measures were taken very soon after the intervention, we are not in a position to predict the impact of the intervention at a later point in time. Follow-up data are needed in order to assess the durability of the intervention effects in time.

## Summary

- **Assessments at 12 weeks, immediately post intervention, found that children in the intervention groups were reported by parents to have fewer conduct problems and to have improved more in their reading than children in the Signposting group.**
- **Unlike parents in the Signposting group, those in the intervention groups felt that their children's major behavioural difficulties reduced considerably. In addition, they felt more confident in managing their children's behaviour.**
- **The parents of those in the Literacy group also reported that their children's reading improved by a greater degree than those in the other interventions or Signposting.**
- **If confirmed by the full results at the end of the trial, these findings will have major implications for reducing social disadvantage. In particular, the parent-led reading support for children is a world first and offers the opportunity to lift children in need out of the consequences of poverty.**

## 8. Appendix

### SCREENING QUESTIONNAIRE (PARENTS)

Your child's name

\_\_\_\_\_

Child's

Class \_\_\_\_\_

Your child's date of birth (day/month/year)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Male/Female

Blue = Conduct - Score 3 or more to be included  
Green = DSMIV – score 5 or more to be included

Blue = Conduct - Score 3 or more to be included  
Green = DSMIV – score 5 or more to be included

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with others (food, games, pens, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often has temper tantrums or hot tempers	0	1	2
Rather solitary, tends to play alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angry and resentful	0	1	2
Generally obedient, usually does what adults request	0	1	2
Loses temper	2	1	0
Blames others for his/her mistakes or misbehaviour	0	1	2
Steals from home, school or elsewhere	0	1	2
Argues with adults	0	1	2
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Actively defies or refuses to comply with adults' requests	0	1	2
Deliberately does things that annoy other people	0	1	2
Often fights with other children or bullies them	0	1	2
Generally liked by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spiteful or vindictive	0	1	2
Often lies or cheats	0	1	2
Picked on or bullied by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Touchy or easily annoyed by others	0	1	2
Often volunteers to help others (parents, teachers, children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets on better with adults than with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## 9. References

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders*. 4<sup>th</sup> ed. Washington, DC: American Psychiatric Association

Cohen, J. (1977). *Statistical Power Analysis for the Behavioural Sciences*. London: Academic Press

Elliot, C.D., Smith, P., & McCulloch, K. (1996). *British ability scales second edition (BAS II)*, Windsor, UK: NFER-Nelson

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. (1992b). Externalising behaviour problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin*, 111(1), 127-155.

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

**Ref: DFE-RR185b**

**ISBN: 978-1-78105-058-3**

**© The Department for Education**

**February 2012**