

# Impact of a parenting program in a high-risk, multi-ethnic community: the PALS trial

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**Background:** Parenting programs have been shown to work when delivered to motivated ethnic majority parents in demonstration projects, but comparatively little is known about their impact when delivered to high-risk, multi-ethnic populations by routine local services. **Methods:** The Primary Age Learning Skills (PALS) trial was a randomized controlled trial of an evidence-based parenting-group program that targeted the parent-child relationship and child literacy. Parents of 174 children were selected from a population of 672 5- and 6-year-olds attending four primary schools in a high-risk, ethnically diverse, inner-city area. Eighty-eight children were allocated to the Incredible Years preventive program plus a shortened six-week version of the SPOKES literacy program, delivered by local services; 86 to usual community services; 152/174 (87%) of families were successfully followed up. Parent-child relationship quality and child behavior were measured using direct observation and parent interview; child reading was assessed psychometrically. **Results:** Two-thirds (58/89) of those offered the parenting program attended at least one session, with similar enrolment rates across the Black African, African-Caribbean, White-British and Other ethnic groups. Mean attendance was four relationship-building sessions and one literacy-development session. Satisfaction questionnaires were completed by 43/58 starters; 93% said they were well or extremely satisfied, with equally high rates across ethnic groups. At follow-up after one year, those allocated to the intervention showed significant improvements in the parent-child relationship on observation and at interview compared to controls; effects were similar across all ethnic groups. However, child behavior problems and reading did not improve. The cost was £1,343 (\$2,100) per child. **Conclusions:** Programs can be organized to be engaging and effective in improving parenting among high-risk, multi-ethnic communities, which is of considerable value. To also be cost-effective in achieving child changes may require a set-up that enables parents to attend more sessions and/or an exclusive focus on children with clinically significant behavior problems. **Keywords:** Behavior problems, ethnicity, parent training, parent-child interaction, treatment.

Parenting interventions have repeatedly been shown to improve the quality of the relationship parents have with their children and to improve child social behavior (Kazdin, 2005; Scott, 2008). This has led to increasing adoption of parenting programs to improve parenting practices and reduce child anti-social behavior. The National Institute for Health and Clinical Excellence in England recommended effective parenting programs as the standard treatment for childhood conduct disorder (NICE, 2006); in 2007 the National Academy for Parenting Practitioners was set up in England to disseminate evidence-based programs throughout the country and conduct research on promising new approaches (Scott, 2010). Many authoritative bodies are urging large-scale investment in early prevention (e.g., US National Academies, 2009).

Success in the clinical context has led to programs being tried more widely in community settings, with the aim of preventing a wide range of poor outcomes

associated with antisocial behavior, such as involvement in risky lifestyles, low school attainment, and a lack of satisfactory friendships (Fergusson, Horwood, & Ridder, 2005). The implication is that there may be considerable clinical, public health, and financial benefits to society from disseminating the use of suitable parenting programs on a large scale. There have been a number of carefully executed model prevention projects that took an entire population of children and then offered parenting programs for those at high risk from anti-social behavior (e.g., Conduct Problems Prevention Research Group (CPPRG), 1999; Barkley, Shelton, & Crosswait, 2000; August, Realmuto, Hektner, & Bloomquist, 2001).

There are, however, many difficulties in making such interventions effective when disseminated widely, because population-level work is fraught with a number of problems (Dodge, 2009). First, in 'real-life' practice, when therapists are locally employed and managed, they may be less skilled and committed to an evidence-based model, and so get poor outcomes (Weisz, Doss, & Hawley, 2006). An objective of this study, the Primary Age Learning Skills trial (PALS; in the UK, primary school runs

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from age 5 to 11) was to see whether a prevention program could work under 'real-life' conditions.

Second, the demonstration projects cited above cost several thousand dollars per child. While expensive programs can in theory be justified since in the long run they should reduce the high cost of antisocial behavior arising from increased use of services, higher levels of crime and greater dependence on financial handouts (Scott, Knapp, Henderson, & Maughan, 2001), the high upfront expense of more elaborate interventions is often prohibitive (Foster, Jones, & the CPPRG, 2006). The PALS program aimed to be reasonably affordable.

Third, there is little evidence that prevention projects can reach populations with the highest need under everyday conditions. Such families warrant services since poor child outcomes increase steeply with multiple risk factors (Appleyard, Egeland, van Dulmen, & Sroufe, 2005), yet it is these same risks that are associated with lower engagement, higher dropout rates and smaller intervention effects (Reyno & McGrath, 2006). In short, both current services and the majority of existing clinical research studies fail to engage this population adequately. There are two aspects to engagement, initially getting parents to attend the first session, then subsequently maintaining sufficient involvement to bring about change. Initial engagement rates in universal programs are often low, e.g., 17% in the parenting element of the Early Risers dissemination study (August, Bloomquist, Lee, Realmuto, & Hektner, 2006), and 23% in the socially disadvantaged sample of Heinrichs, Bertram, Kuschel, and Hahlweg (2005). The PALS project was conducted in a highly deprived neighborhood to see if the high engagement rates achieved in demonstration projects by program developers (e.g., 63% in Webster-Stratton, Reid, & Hammond 2001) could be replicated in a relatively routine dissemination.

Fourth, 'Western' models of parenting may not be applicable for families from different cultural and ethnic backgrounds. It has been argued that such models, with for example their emphasis on non-directive play and non-corporal punishment, may not be seen as desirable or relevant in some cultures, which in turn will lead to low take-up and little change in parenting. For example, smacking is more acceptable in some cultures than others and may have different effects (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). The counter-argument is that cross-cultural studies suggest that warm, involved relationships between parents and children backed by firm limits are associated with better child outcomes irrespective of culture (Steinberg, 2001), and that although developed in the West, parenting programs may be universally applicable and effective (Huey & Polo 2008).

In multi-cultural, multi-ethnic samples there is also the practical problem that the intervention cannot be tailored to address any one group, and effec-

tiveness may be reduced or inconsistent; empirical evidence on this important question concerning generalizability is limited. Webster-Stratton (1998) found changes in a multi-ethnic Head Start sample, but a second study (Webster-Stratton, Reid, & Hammond, 2001) found no significant changes in overall parenting or child conduct problems at one year follow-up. However, when the samples from the two studies were combined the effects on parenting were consistently significant, although only one of six measures of child behavior improved. Crucially, however, the authors found similar changes in minority groups as in the White majority (Reid, Webster-Stratton, & Beauchaine, 2001), suggesting that at least when delivered by the program developer, families in ethnic minorities responded just as well. The PALS trial aimed to investigate whether in England minority ethnic groups would likewise engage and change as much as the White majority group.

Our group has done previous work that informed this trial. We found that under 'real life' conditions with a clinically referred population the Incredible Years (IY) program achieved a large effect on antisocial behavior (effect size (ES) 1.06; Scott, Spender, Doolan, Jacobs, & Aspland, 2001), replicated by Gardner, Burton, and Klimes (2006). After this we conducted a prevention trial in schools with a majority of White British parents of 5–6-year-old children, combining IY with a child literacy program, and found it was effective in improving parenting (ES .3–.6), child antisocial behavior (ES .52) and reading (ES .36) (Scott et al., 2010). The present study aimed to build on these findings and investigate the generalizability of the combined IY and literacy program by making it more sustainable in terms of cost and deliverability and test its impact in a particularly disadvantaged, multi-ethnic inner city area. To reduce the chances of parents feeling stigmatized, groups combined parents of children displaying antisocial behavior problems with parents of children who had none. The study questions were:

1. What proportion of parents would attend in a highly deprived, inner-city area?
2. Would there be equal take-up and acceptability across minority and White ethnic groups?
3. How much would the program cost?
4. Would the intervention improve parenting so it became more positive and less negative?
5. Would parenting change equally across ethnic groups?
6. Would children's antisocial behavior and reading improve, and would there be ethnic differences?

## Method

*Location.* The trial took place from 2001 to 2004 in all four primary schools in the most disadvantaged ward in Southwark, an inner-city London borough that ranks in the highest 2% of deprivation levels in England.

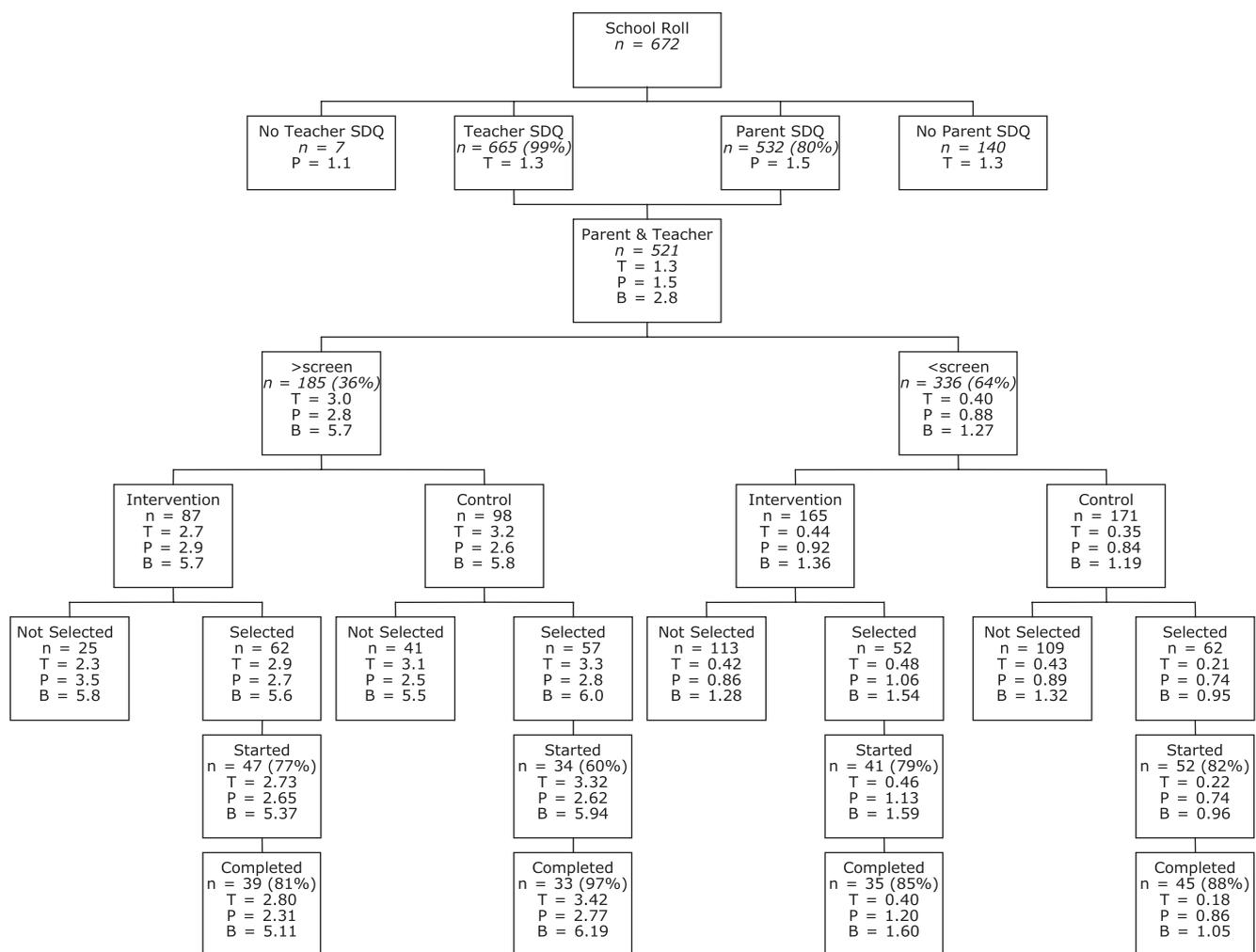
*Design.* Group randomized controlled trial, with random allocation of classrooms as intervention or control. The four schools had eight classes, so over three years a total of 24 classes were randomized. Each class had an average of 28 pupils.

*Participants.* All 672 reception and year one (kindergarten) pupils were screened for behavioral difficulties by questionnaire, yielding 665 (99%) teacher reports and 532 (80%) parent reports (Figure 1).

*Screen.* Teachers and parents were asked to complete the conduct problems scale of the Strengths and Difficulties Questionnaire (Goodman, 2001). Additionally, the eight DSM-IV oppositional-defiant disorder items were used. Parent and teacher scores were summed. Children whose scores were  $SDQ \geq 5$  or  $DSM \geq 10$ , one standard deviation above the population mean, were deemed as higher-risk, designed to capture most cases at risk of lifetime-persistent antisocial behavior. Children who scored below were deemed lower-risk. After the screen, all families in the class were assessed for (1) ability to understand English and (2) index child free of clinically apparent global developmental delay. This

led to 16 being excluded, 10 on language grounds and 6 due to delay.

*Recruitment to the trial.* Parents were invited to coffee mornings to learn about the project. Equal numbers of higher- and lower-risk children's parents were approached to minimize stigma. There were 5–9 higher-risk children per class, who were randomized in a ratio of 2:1 to be approached for the study by sending case numbers only to the trial statistician who was independent of the study and used GENSTAT. There were 18–23 lower-risk children per class, who were randomized in a ratio of 1:2. Two hundred and thirty-three parents were then sent letters describing the study, inviting them to participate; 174 (75%) agreed, of whom 152 families (87%) were successfully assessed at one-year follow-up. This is shown in Figure 1, participant flow, which demonstrates the numbers of cases with responses to the teacher and parent screens, the proportion above and below the cutoff, the numbers selected by the randomization process for the intensive study in the higher-risk and lower-risk groups, and the



**Figure 1** Participant flow. Footnote: T = the score on the Teacher SDQ conduct problems scale (range 0–10); P = score on the Parent SDQ conduct problems scale (range 0–10), B = the sum of Both teacher and parent scores. Selected = selected by randomisation to be offered the opportunity to take part in the study. Started = consented to be part of the trial. The numbers who declined to take part is the difference between the number “selected” and “started”, 25% overall. 272 of the 288 “not selected” were due to the randomisation process, 10 due to inadequate English and 6 due to marked developmental delay, in similar proportions across the four groups

subsequent participation and follow-up rates, as recommended by the CONSORT guidelines. Families were paid £30 for each assessment but not for attendance. Written consent was obtained from each participant; the local research ethics committee approved the project.

### Interventions

Eighteen two-hour sessions were offered, interleaving a 12-week parenting program with a six-week literacy program:

*Relationship element.* This was the basic 12-week 'Incredible Years' (IY; Webster-Stratton, 1998) school-age program which addresses the parent-child relationship and child behavior. The focus is on how parents can bring the best out of their child. The people depicted in the videotapes come from a variety of ethnic groups. The scenes show parents and children in a variety of common situations, with the parents sometimes behaving in a way that leads to the child being calm and obedient, and sometimes to being miserable and having tantrums. Through observation and group discussion, the elements of parental behavior that led to successful child outcomes are drawn out. Then parents practice the new techniques in role-plays and are instructed to practice the new skills at home, and are telephoned by the group leader mid-week to solve difficulties.

*Literacy element.* This was a shortened 6-week version of the SPOKES manualized program (Supporting Parents on Kids' Education in Schools; Sylva, Scott, Totsika, Ereky-Stevens, & Crook, 2008). It begins with a 'whole language' approach, where parents are encouraged to discuss the child's book and link the text to the child's everyday experiences. They are encouraged to play rhyming games with their children and to 'discover' print in their ordinary environment. It then teaches the Pause Prompt Praise approach to reading. When a child encounters an unknown word, the parent is taught to pause for 5 seconds; if the child doesn't succeed, the parent gives a specific prompt, and then praises the child for complying (after McNaughton, Glynn, & Robinson, 1987). Other elements included role-play, homework, and a home visit.

*Group leaders.* Each of the 11 groups had a leader and a co-leader. The main leader (for eight groups) had a psychology degree and a Masters in child development. She was trained in IY by: (1) attendance at a three-day accredited training; (2) observation of a 12-week group, with (3) attendance at weekly supervision led by mentors (4) leading eight groups; (5) accreditation from the program developer. The leader for the remaining three groups had a psychology degree and training in the program but not experience prior to the trial, or certification. Co-leaders were child mental health professionals in training without certification (seven groups), or were trainees with psychology degrees but little group experience (four groups). None of the leaders had a professional training, for example as a nurse, clinical psychologist, educational therapist

or family therapist. This is typical of the majority of preventive parenting services in England, which have undergone a large expansion recently.

*Treatment fidelity.* Treatment fidelity was emphasized and was addressed by: (a) training described above; (b) completing treatment adherence schedules weekly; (c) acting on weekly feedback from group participants; and (d) weekly supervision meetings with an IY 'mentor'. During supervision, videotapes of the last group were shown and therapeutic techniques discussed and practiced. Training for the literacy program was less formal.

*Control group.* No active intervention was offered.

*Help available to all participants in both arms of the trial.* A general practitioner, school-based drop-in service, and specialist mental health service were available and parents were told that participating in the project was no bar to using these.

### Measures

All measures other than participant characteristics, user satisfaction and cost were taken before allocation to the intervention and repeated one year later.

*Masking.* Interviewers were blind to treatment status at both pre and follow-up assessments. Coders were blind to treatment status and time point of videotaped observations.

*Participant characteristics.* Family characteristics were recorded at interview. The primary caregiver was asked to identify his/her ethnicity and to fill in the General Health Questionnaire (GHQ 12), an index of mental health (Goldberg et al., 1997).

*Parenting. Observation:* The observation procedure of the Conduct Problems Research Group (CPPRG; 1999) was the primary parenting outcome. Parent-child interaction was videotaped at home across: (i) free play (ten minutes); (ii) child attempts a difficult construction with Lego bricks (ten minutes); (iii) parent gets child to tidy away the toys (three minutes). Scoring was by two raters blind to intervention status. Reliability was assessed on 20 tapes rated independently. There were four scales: coders used a modified version of the CPPRG coding scheme, whence all frequency counts at time one (averaged across the three interaction settings) were entered into a Principal Components Analysis with Varimax rotation. This yielded two factors, and scores on each subscale were summed: (a) Child-centered parenting (commenting on the child's activities, encouraging comments, praise, putting requests as questions in the conditional tense), (b) negative control (clear commands, vague commands, criticisms, prohibitions). Additionally, we made two seven-point global ratings of emotional tone: (c) positive affect, (d) negative affect. Intra-class correlations (ICC) for the four scales were .75, .78, .81, .83.

*Interview:* We used the semi-structured interview developed by Dowdney, Mrazek, Quinton, and Rutter

(1984). For each of several topics (e.g., mealtimes, bedtimes) the parent is asked to give detailed examples from the previous week of specific behaviors, then after further questioning the investigator makes a rating on a five-point scale about the past month. The interview has discriminant validity (Dowdney, Skuse, Rutter, Quinton, & Mrazek, 1985) and concurrent validity with direct observation (Dowdney et al., 1984). Reliability was calculated on 30 training interviews. Topics covered were (a) *praise and rewards*, the number of times per day the child was praised for compliance, plus the number of times per week the child was given a tangible reward (ICC = .87); (b) *calm discipline*, the number of times per week privileges were withdrawn, plus the number of times per week the child was calmly sent to a quiet place for less than ten minutes (ICC = .83); (c) *coercive discipline*, the number of times per week the child was sent away for longer than ten minutes, plus how many times per week the child was smacked (ICC .79).

*User satisfaction:* The questionnaire devised by Webster-Stratton (1989) was administered. It consists of seven-point rating scales.

*Cost per child:* The total grant allocated was spent on staff salaries and running expenses (but office rental was free) and divided by the number of children commencing intervention.

*Child behavior. Observation:* The tasks above were rated for: (a) *noncompliance* using a frequency count of times the child failed to obey parental commands (ICC .97) and (b) *on-task behavior* was a global rating on a seven-point scale (ICC .84).

*Interview:* The Parent Account of Child Symptoms (PACS; Taylor, Schachar, Thorley, & Weiselberg, 1986) was the trial's primary child outcome. This is a standard investigator-based interview similar to, but shorter than, the Child and Adolescent Psychiatric Assessment (Angold et al., 1995). It was used to measure *conduct problems* (lying, stealing, tantrums, rudeness, disobedience, destructiveness, aggressiveness) scored 0–3 for severity and frequency in the last month and the mean calculated (range 0–6); ICC was .82.

*Questionnaire:* The conduct scale of the Strengths and Difficulties Questionnaire, which has good psychometric properties (Goodman, 2001), was completed by parents and teachers.

*Child reading ability:* The British Ability Scale (Elliot, Smith, & McCulloch, 1996) is an individually administered test of the child's ability to read single words. Researchers received extensive training until they reached 95% agreement.

Assessors and parents were blind to allocation status at initial assessment. At follow-up, questionnaires were entered by data staff blind, videotapes were coded by researchers blind, and interviews were carried out by assessors blind.

### Statistical analysis

The main results were calculated on an 'intention-to-treat' basis (i.e., irrespective of number of sessions attended); where there were missing follow-up data, pre-values were carried forward. Multiple regression analysis was used, entering follow-up score as the dependent variable, and the pre-treatment score,

higher-risk status, and intervention status as independent variables. One-year follow-up data are reported because of our interest in persisting treatment effects. Secondly, a per-protocol analysis was carried out for parents who attended five or more sessions (deemed by us to be the minimum likely to be effective). Supplementary analyses examined whether the treatment effects were moderated by ethnic background and higher-risk status. A final consideration was possible clustering effects. Although there was not a school-based component to the intervention, children within randomization level might show greater resemblance than children selected at random. We used multilevel modeling (MLwiN version 2.12; Rasbash, 2009) to account for possible clustering effects. We did not obtain evidence of significant clustering and so do not detail school-level (Level 2) effects in the models (details available from the authors).

## Results

### Participants

The sample was ethnically diverse, with three-quarters of families coming from minority groups, and at high risk for social problems (see Table 1). Ethnicity was defined in four categories: White British, Black African, Black African-Caribbean, or Other (mostly Far East Asia, Indian subcontinent, and Middle East). There were no differences between the intervention and comparison group on any of these factors. Of the 174 initial participants, post-intervention data was collected on 152 (87%). Of the other 22 families, 14 had moved away, and 8 said they were too busy with work or too ill. Those with no post-intervention data did not differ significantly on any risk factor, suggesting that the sample gathered is representative.

**Table 1** Participant characteristics

	Intervention group (n = 88)	Control group (n = 86)	Mean values for England
Child age (mean in months)	66.4 (5.9)	65.7 (5.5)	
Child male	49% (43)	44% (38)	51%
Primary caregiver ethnicity:			
White British	24% (21)	24% (21)	
Black African	43% (38)	48% (41)	
Black African-Caribbean	22% (19)	15% (13)	
Other	11% (10)	13% (11)	
Total in minority	76% (67)	76% (65)	9%
Lone parent	56% (49)	50% (43)	22%
Mother ended education by 16, gained no further qualifications	24% (21)	26% (22)	13%
State-assisted housing	82% (72)	77% (66)	17%
Household income £175 per week or less	43% (38)	34% (29)	5%
Mother mental health problems (GHQ 12 score 3+)	11% (10)	9% (8)	18%

England data from *Social Trends*. London: Office of National Statistics, 2000.

### Attendance and satisfaction with the parenting program

Eighty-eight families were allocated to the intervention. Mean attendance for the whole sample whom we wished to reach was 4.8 sessions (SD 5.7), median 2, range 0 to 18, with no significant ethnic differences (African 4.2, African-Caribbean 4.4, White British 6.7, Other 5.1). However, a third of families ( $n = 30$ ) did not attend at all, with no significant difference in ethnic distribution, nor by risk status (high-risk 4.4, low-risk 5.3). For the remaining two-thirds of parents who did show up at least once ( $n = 58$ ), mean attendance was 7.3 sessions (median = 5).

Satisfaction questionnaires were available from 43 of the 58 parents who started the intervention. Ratings were universally high and showed no ethnic differences; for example, 93% of Black African parents said they were well or extremely satisfied with the program, and 91% said they would recommend it to a friend, similar rates to other ethnic groups.

### Program cost and use of other services

The grant of £220,000 covered salaries for group leaders, a part-time assistant, and supervision, as well as childcare for parents. Twenty percent of staff time was spent on activities outside the project and 43 non-studied additional parents commenced the intervention. Thus 131 children had an intervention costing £176,000, £1,343 (approximately \$2,000) per child. To give a yardstick of comparison, this is less than a third of the £5,000 or so per year regular schooling costs. Ten percent of parents had used some form of National Health Service (NHS) service for their child's emotional or behavioral problems. There were no differences between intervention and control groups, but 17% of the White British population had used these services but only 5% of minority parents, a threefold difference.

### Intervention effects on parenting

Using direct observation, there was a significant effect of the intervention on the frequency of use of

child-centered parenting (ES .42), but not on the frequency of negative control; there was also a significant reduction in global negative affect (ES .33) but no change in positive affect (see Table 2). On parent interview, the intervention group showed a significant increase in the use of calm discipline (ES .38) but no increase in praise and rewards or reduction in the use of coercive discipline.

*Supplementary analyses.* Per protocol analyses (contrasting those who attended at least five sessions with controls, 53% of attenders, mean 11.7 sessions, sd 3.9) indicated a modest increase in effect size by 10–20% (details available from authors). Moderation analyses tested main effects for Black-African, African-Caribbean, and Other (i.e., White British was the control condition) as well as the three interactions with treatment group. Regression analyses indicated that treatment effects did not differ significantly across ethnic group. That was equally true for the three parenting measures that did change with intervention and those that did not (all  $p$ 's > .2; details available from authors). Likewise, there were no significant treatment  $\times$  higher-risk status interactions (all  $p$ 's > .2).

### Intervention effect on child outcomes

There were no significant treatment effects on observed noncompliance or on-task behavior, interview measures of antisocial behavior or parent or teacher-completed questionnaires of behavioral problems. In literacy testing, there were no significant improvements in the single word reading measure of ability (see Table 3). For all child outcomes, there were no significant ethnic differences.

*Supplementary analyses.* Per protocol analyses of families attending five or more sessions were not associated with significant improvement in child outcomes. Nor was there any evidence of moderation effects for the treatment according to ethnicity or higher-risk status.

**Table 2.** Intervention Effects on Parenting

	Control		Intervention		Regression effects on follow-up scores		
	Pre-	Follow-up	Pre-	Follow-up	Intervention	High need	Initial (Pre-) score
<b>Observations</b>							
Child centred	.42 (.24)	.36 (.20)	.35 (.23)	.39 (.25)	.07 (.03)*	-.00 (.03)	.69 (.06)**
Negative control	1.28 (.76)	1.17 (.60)	1.34 (.83)	1.23 (.97)	.03 (.11)	-.04 (.11)	.60 (.07)**
Positive affect	2.79 (1.15)	2.70 (.96)	2.49 (1.01)	2.63 (.94)	.10 (.13)	.08 (.12)	.56 (.06)**
Negative affect	1.84 (1.08)	2.08 (.98)	1.90 (1.07)	1.77 (.94)	-.34 (.14)*	.11 (.13)	.50 (.06)**
<b>Interview</b>							
Calm discipline	.90 (.90)	.69 (.90)	.87 (.99)	1.02 (1.12)	.41 (.17)**	.07 (.13)	.50 (.07)**
Praise/reward	1.53 (.77)	1.44 (.74)	1.70 (.78)	1.52 (.77)	-.01 (.10)	.07 (.09)	.60 (.06)**
Coercive discipline	.67 (.58)	.62 (.50)	.81 (.72)	.75 (.63)	.04 (.07)	.12 (.06)	.59 (.05)**

Note: For observational data,  $n$ 's in control/intervention arms are 76/ 69; for interview, 85/ 88. \*  $p < .05$ , \*\*  $p < .01$ .

**Table 3.** Intervention Effects on Child Outcomes

	Control		Intervention		Regression effects on follow-up scores		
	Pre-	Follow-up	Pre-	Follow-up	Intervention	High need	Initial (Pre-) score
Observation							
Non-Compliance	.07 (.07)	.06 (.06)	.09 (.08)	.07 (.09)	.01 (.01)	.01 (.01)	.50 (.07)**
On task	5.74 (.99)	5.80 (.88)	5.94 (.88)	5.93 (.79)	.08 (.13)	-.01 (.13)	.28 (.07)**
Interview							
PACS conduct	.72 (.45)	.61 (.39)	.78 (.52)	.73 (.47)	.08 (.04)	.03 (.04)	.68 (.04)**
Questionnaire							
Mother							
SDQ conduct	1.52 (1.84)	1.51 (1.40)	1.92 (1.82)	1.97 (2.03)	.18 (.22)	.44 (.24)	.53 (.07)**
Teacher							
SDQ conduct	1.40 (2.29)	1.25 (1.95)	1.59 (1.99)	1.57 (1.93)	.19 (.24)	.19 (.30)	.56 (.07)**
Reading							
Single word reading	8.11 (11.34)	31.33 (22.78)	7.36 (12.25)	28.84 (21.54)	-.76 (2.4)	-5.11 (2.07)*	1.46 (.09)**

Note: For observational and interview data, n's are as for Table 2; for mother questionnaire, n's are 85 Control and 87 Intervention; for teacher, 75/82 \*  $p < .05$ , \*\*  $p < .01$ .

## Discussion

The PALS prevention program was developed as a practical, 'real life' disseminable parenting intervention that targeted ethnically diverse families in a very deprived area. The rate of initial engagement in the intervention was high and as good as in model demonstration projects, but the subsequent level of attendance was modest, although not untypical of universal prevention programs. All measures suggested that the program was as appealing, relevant, and effective for minority families as for the indigenous White population. The intervention resulted in positive changes in the parent-child relationship, according to both independent observations and parental interview, with effect sizes ranging from .33 to .42. However, it did not lead to significant improvements in child behavior or reading.

### Strengths and limitations

The study took place in a deprived multi-ethnic inner-city area where children are at high risk of poor outcomes. It took as its base the whole population of children, not just those whose parents were seeking help or whose children had problems; this avoided the problem of stigmatizing parents who attended, and allowed evaluation of effectiveness at a population level. The intervention was offered during an important developmental transition period in the children's lives, as they negotiated settling into school; it therefore targeted reading skills as well as behavior. The teacher (99%) and parent (80%) response rates to the screen were high, the measures were high quality, using multiple informants (parent, teacher, investigator) and multiple methods (questionnaire, interview, observation, testing). The follow-up rate of 87% of families was good for this highly mobile, hard-to-reach population. The follow-up period was one year after commencement, making any positive findings more enduring than if reassessment had been at six months.

The results were analyzed to include all eligible parents to whom the intervention was offered, even if they were uninterested or unable to attend. The study can therefore inform commissioners of the likely impact on the whole school year population of implementing such a program: it was not just a study of parents motivated and able to attend, which would risk missing those most in need. However, this strict 'intention-to-treat' approach also made finding any positive outcomes harder, since all those cases who did not participate in the intervention (a third of families here) or who could not be found at follow-up were included in the analysis, but were assumed not to have changed.

Compared to the previous trial, where attendance was better and both parenting and child outcomes improved (Scott et al., 2010), three changes were made to make it easier to disseminate the program: (a) the intervention was shortened from 28 to 18 sessions; (b) although the group leaders were graduates, they had not been through a clinical or educational professional training; (c) children without behavior problems were included. Although there was a good mix of ethnic groups, the study was not specifically designed to test hypotheses about ethnic moderation of treatment effects, so that the lack of evidence for effects of ethnicity must be viewed cautiously.

### Extending parenting programs to high-need families and communities

The interventionists took trouble to carefully build relationships with schools, and found it is possible to gain the trust of families in disadvantaged communities where they are traditionally seen as 'hard to reach'. Two-thirds of families approached took part in the intervention to some extent, notably higher than the fifth or so engaging in the dissemination studies mentioned in the introduction. It is a good proportion considering that over half of the participants were single parents with no live-in

partner, and nearly half were employed, both of which meant they were often unable to attend the groups. An unpublished qualitative study of non-engagers and non-completers in this program found that the overwhelming reason given was being too busy. Since groups were only held during the working day (due to resource limitations) and given that this was a preventive trial where most parents didn't feel their children had pressing needs, this level of initial engagement showed considerable commitment to bettering their children's chances. However, the level of subsequent attendance, mean 7.3 out of 18 sessions in program engagers, was perhaps insufficient to bring about reliable change in child behavior; when all those intended to be reached by the intervention were included, the mean was 4.8 sessions. These levels are typical of universal programs offered in deprived, multi-ethnic neighborhoods, e.g., Webster-Stratton (1998) found a mean attendance level of 5.9 sessions in her first Head Start trial and 5.7 in the second; the proportion not attending any sessions, 37%, was similar to this trial (Webster-Stratton, Reid, & Hammond 2001). In those trials engagement rates were lower amongst families whose children had no significant conduct problems, a factor likely to have been influential here, where even in the so-called higher-risk children, the reported level of antisocial behavior was low, being close to the population mean.

#### *Accessibility and acceptability for minority families*

The initial engagement rates for the first session, subsequent attendance and consumer satisfaction ratings were as good for ethnic minority groups as for the White British population. This ability to engage with people in proportion to their prevalence in the overall local population is an important finding of the study and shows that cultural and ethnic barriers to engagement can be overcome. Again, these findings are consistent with the Webster-Stratton prevention trials noted above. The success may be related to the sensitivity with which the IY program addresses cultural issues, since not all programs engage minority families equally well – the meta-analysis by Reyno and McGrath (2006) found somewhat lower levels of attendance in minorities (ES .2).

#### *Changes in the parent-child relationship*

There were clear changes in the quality of the parent-child relationship associated with treatment allocation; we observed significant change in three of seven measures and found improvement with two distinct methods of measurement. Using the 'gold standard' of direct observation, parents allocated to the intervention changed their way of relating to their children, attending to them and praising them more often than before, with similar levels of overall

positive affect. They continued to issue the same number of commands to achieve control, but the overall level of negative affect was lowered. These findings suggest a closer involvement of the parents with their children and a less negative emotional tone, both of which are likely to lead to a more positive immediate experience of the parent figures, and better long-term outcomes for children (Loeber & Farrington, 2000). Interviews with the parents about their practices revealed that they used calm discipline more, by applying more logical and age-appropriate consequences for misbehavior. However, they did not report reducing their rate of sending their children away for longer periods and smacking them, although reported levels of smacking were low; nor did they report using praise and rewards more often after the intervention. The per-protocol analysis, which included only those parents who attended at least five sessions, found somewhat bigger changes on both observational and interview measures. This suggests that attending more sessions gives greater changes.

#### *Relationship changes in minority families*

The sampling method did not target ethnic minority status, but rather included a high percentage of minority families (76%) in the inner-city, high-need area. That meant that the study was not formally powered to test ethnic moderation effects, but generated estimates that might generalize to similar areas.

From a theoretical standpoint, it is interesting that parents from minority groups changed as much, despite many having notably different parenting beliefs and practices, based on our own anecdotal observations and prior research (Lansford et al., 2004). The largest group in this study was West African, the majority of whom had only immigrated in the last 5–10 years. Their model of parenting was one with the strong expectation that children should be quiet and respectful in the presence of their elders rather than expressive, and the belief that physical punishment and the induction of fear were acceptable disciplinary strategies. Despite owning this cultural background, many parents stated that they wanted advice on how to bring up their children in the new, unfamiliar English context. The evidence from this trial showed that minority families engaged as well as White ones, were just as satisfied, and showed equal changes in their parenting. This refutes the notion that the program would not be seen as relevant, or that it would not change parenting. The IY program ethos is relevant in understanding this success, as it takes a collaborative approach, whereby parents rather than professionals set the goals they want for their children, and then the group-leader sensitively offers a range of strategies which parents are free to adopt or reject according to their belief systems and needs

(Webster-Stratton, 2009). In this sense, each group member defines his/her own culture. The findings of this trial fit in with the wider evidence on psychosocial interventions for ethnic minority children; for example, the meta-analysis by Huey and Polo (2008) found no moderating effects of ethnicity. The implication for dissemination is that it may be less expensive and time-consuming to use existing, culturally sensitive evidence-based programs rather than develop new ones specific for a particular culture; there is a limit to how many different parenting interventions an agency can deliver effectively, especially if their clientele includes many cultures.

### *Child outcomes*

The failure to improve child outcomes was a disappointing aspect of this trial. A number of explanations warrant consideration. (1) It is unlikely to be due to the program chosen, since, with children who have had significant conduct problems, it has worked in many previous trials conducted by ourselves and others. (2) Ethnicity is unlikely to be the reason since all groups changed similarly in their parenting practices here, and there were no ethnic differences in other trials of this program. (3) Therapist skill is a possible contributor. As noted in the methods section, the group leaders did not have a professional clinical training, although the main group-leader was well trained in the IY program, had led groups in the previously successful trials and was well supervised. The co-leaders were less experienced in this program. Skill certainly affects outcome, and it is planned to assess videotapes of the groups to evaluate this as a factor. However, even if the skill level was not the very highest, the level here was as good as is likely to be found in typical 'real life' dissemination, so the trial results are generalizable.

(4) The attendance rates were probably too low to bring about the widespread changes in parenting needed to modify child behavior, particularly given the high psychosocial and economic stressors in the sample. Although several parenting practices changed, the overall mean number of two-hour sessions attended, five, was low. However, as noted above, this finding is in line with similar trials (Webster-Stratton, 1998; Webster-Stratton et al., 2001) and greater attendance is associated with larger effects across more dimensions of parenting (Reid et al., 2004). Higher attendance might be obtained by holding sessions in the evenings, at work premises, or offering home visits. (5) Perhaps the single greatest factor affecting effectiveness was the initial level of child difficulty, which was slightly below the population mean. This had two effects: first, there was little room for measurable improvement. Trials of the

same program that take only more severely affected children typically achieve improved child outcomes (Hutchings et al., 2007), and within trials with mixed severity levels, the more antisocial children change more (Reid et al., 2004). In future studies, it may help to include measures of pro-social behavior which can show changes even in non-problem children (Reid et al., 2004). Second, attendance is poorer for parents whose children lack problems (Reid et al., 2004). Other investigators have found a similar pattern in prevention trials, with no changes in child outcomes, and often none in parenting either (e.g., Barkley et al., 2000; August et al., 2001; Webster-Stratton et al., 2001).

### **Conclusions**

This study showed that even in highly deprived areas it is possible to engage a high proportion of parents from mixed ethnic backgrounds in parenting interventions. This success was likely to be due to working closely with school staff and using a collaborative program delivered at the children's school. The study showed that improvements in parenting can be achieved across diverse ethnic groups despite considerable variations in beliefs and practices. However, the lack of improvement in child outcomes serves as a reminder that several carefully conducted prevention trials have not shown the hoped-for changes: despite all the enthusiastic rhetoric, early childhood prevention is not always effective, in our current state of knowledge. Further research is needed to discover how best to keep attendance rates high in stressed populations, and whether targeting only more severely affected children improves cost-effectiveness. In the meantime, when investing large sums of public money in preventive parenting programs care should be taken to adopt best intervention practices and rigorously evaluate outcomes.

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