Evidence for the extended School Aged Incredible Years parent programme with parents of high-risk 8 to 16 year olds.

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Background: This paper describes outcomes for the Incredible Years programme with parents of 8-16 year olds.

Methods: The sample consisted of 300 parents of children at risk of adolescent antisocial behaviour, mean age 10.5 years.

Results: The data were analysed using matched pre- and post-intervention paired responses and by intention-to-treat (ITT) analysis. ECBI data showed improvements in child behaviour problems at follow-up (t (120)=8.54, p<.001) which remained in the ITT analysis (t (287)=7.91, p<.001). Statistically significant improvements were also found for parental depression and parenting skills.

Conclusions: The programme is effective in improving child behaviour and parenting competencies with parents of 8+ aged children.

Key words
Behaviour problems, conduct disorder, maternal depression, parent training, adolescence

Key practitioner message;
These data provide convincing evidence of the effectiveness of the IY programme with parents of high risk youngsters aged 8 and above. Staff in regular service settings, even when relatively inexperienced, can achieve good outcomes when supported with training, supervision and adequate time and resources.

Background
The Pathfinder Early Intervention Project (PEIP) was funded in 2006 by the Department for Children, Schools and Families (DCSF) to support 18 Authorities in England in delivering one of three programmes to parents of high risk eight to thirteen year olds. Six Authorities delivered the IY parent programme (Webster-Stratton, 1998a, 1998b; Webster-Stratton & Herbert, 1994) which was included in the PEIP project because it has substantial evidence of effectiveness in reducing conduct disorder in children and improving parenting competencies (Baydar, Reid, & Webster-

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Stratton, 2003; Gardner, Burton, & Klimes, 2006). The project ran for 18 months from October 2006 to March 2008.

The DCSF commissioned the Centre for Education Development Appraisal and Research (CEDAR) team at Warwick University, led by Professor Geoff Lindsey (Lindsey, Davis, Strand, Evans, Barlow, Band, Cullen, Cullen, & Hasluck, 2008) to evaluate the project and, although this evaluation included some outcome measures, its main focus was on the implementation process involved in setting up and delivering evidence-based programmes in service settings. The CEDAR evaluation concluded that all three programmes that were included (IY, TripleP and Strengthening Families Strengthening Communities) were effective but the IY programme had a significantly higher parent satisfaction rating than the other two. They hypothesised that this was probably due to the programme being longer (Lindsey et al., 2008).

Although there was substantial clinical evidence for the effectiveness of the IY programme with parents of children aged eight and above, there was no published data on use of the programme with this age range, the extensive randomised controlled trial evidence being with children aged 3-8 years (Taylor, Schnidt, Pepler, & Hodgins, 1998; Webster-Stratton, & Taylor, 1998; Hartman, Stage, & Webster-Stratton, 2001; Hutchings, Bywater, Daley, Gardner, Whitaker, Jones, Eames, & Edwards, 2007). As there had never been a rigorous trial of the programme with this older age range the results of this study, despite not being experimentally rigorous, provide the first evidence for the programme with this age group.

The programme

Even in trials with younger children Webster-Stratton demonstrated that high-risk clinically referred children obtained better outcomes by combining the twelve-session Basic Parent Programme with the eight session Advanced, adult relationship and problem solving programme (Webster-Stratton & Hammond, 1997). As high risk children aged eight and above were likely to have well established problems Webster-Stratton was of the view that their parents would also need a longer programme in order to make and, more importantly, maintain changes. The Authorities had bid for funds to deliver the basic 12-session programme but, at the request of Webster-Stratton, all six agreed to deliver a 17-18 session programme, which combined content from the School Aged Basic and Advanced Programmes. They also agreed to collect additional pre- and post-course data from families and each Authority paid a small sum to Bangor University to cover the cost of measures and the analysis of these data. The measures collected were all ones recommended for routine use in service evaluation. Parents signed a consent to the Authorities passing anonymised evaluation data to the centre at Bangor.

Measures

The following parent report measures (one demographic and four standardised questionnaires) were administered by group leaders to course attenders. The standardised measures were administered both pre- and post-course and the demographic questionnaire at baseline only.

Personal Data and Health Questionnaire (PDHQ2) is a semi-structured interview based on a demographics questionnaire (the PDHQ) developed by the first author for a previous study (Hutchings, Lane, & Kelly, 2004). Questions explore basic socio-demographic and general health data on family members.

The Eyberg Child Behaviour Inventory (ECBI; Eyberg & Ross, 1978; Eyberg, 1980) is a 36-item inventory measuring child problem behaviours among 2-16 year old children as reported by the caregiver. It measures the number of problem behaviours and the frequency with which these behaviours occur. It has two scales, the Intensity scale measures the frequency of problem behaviours displayed by their child, and the Problem scale measures whether or not these behaviours represent a problem for the parent.

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) is a 25-item behavioural screening measure, to assess the occurrence of behaviours associated with conduct problems. It has five subscales, *Emotional Problems, Conduct Problems, Hyperactivity, Peer Problems* and *Pro-social Behaviour.* An additional *Impact Supplement* scale, measures the extent to which the caregiver perceives the child's difficulties to impact on their daily life.

The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item inventory used to measure the self-reported level of adult depression. It measures the severity of characteristic attitudes and symptoms that are associated with depression.

The Arnold-O'Leary Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) is a 30-item inventory of parenting competencies. The scale yields an overall score and three subscales. *Laxness,* refers to insufficient monitoring of the child and their behaviour, *Over-reactivity,* refers to displays of anger, meanness or irritability. *Verbosity* refers to lengthy verbal responses to inappropriate child behaviours.

Leader support
The six Authorities varied in both size and experience of delivering an IY Parent Programme, the most experienced had delivered the programme for over ten years, three had some experience, one had limited experience and one had no prior experience. None of the Authorities had previously delivered targeted programmes to parents of high-risk children in the eight plus age range and, in almost all cases, the staff trained for this project were new to the IY parent programme.

Mentor or trainer support, from within the UK mentor network, provided three day basic leader training, additional training specific to the target age group and supervision. In addition, the first author was funded for 18 months by DCSF to provide co-ordination for the six Authorities and their mentors. Authorities ran a mean of nine groups, ranging from six to eleven. Both parents of the identified child were invited to attend, although the majority of children (94%) were represented by only one parent. There were generally between eight and ten parents per group (mean 9.5). All six Authorities delivered the 17-18 session programme.

Intervention
The intervention consisted of a combination of the IY school aged BASIC and ADVANCED parenting programmes, delivered in 17-18, 2-hour weekly sessions. The school aged BASIC programme is a twelve-week parent programme for parents of children with significant behavioural and related problems. The Advanced programme was developed to deal with relationship and other difficulties associated with poorer longer term outcomes, focusing on adult relationship and problem solving skills and strategies to help children become effective problem solvers.

Sample description

For some services this was the first time that service delivery staff had collected pre- and post-course information and the amount of baseline data returned varied by Authority, with three providing data on 100% of children and the lowest rate of return being 39%. The overall rate of return of baseline data described 79% of all participants from the 54 groups. Although the PEIP was intended for parents of 8-13 year olds, children of participating parents were aged from one to 16 years with a mean age of 9.8 years. Significant improvements were found for the whole sample on all measures (Hutchings et al., 2009). However within the sample there were 300 children aged 8+ years, representing eighty percent of children for whom data was provided. Of these 280 (93%) were aged between 8 and 13 (the PEIP target age range) and 20 (7%) between 14 and 16.This paper reports on data from these 300 children who had a mean age of 10.5 (SD 1.63).

In all identified cases the primary carer was female. Ninety-five percent were the child's biological parent. Sixty-four percent had left school at aged 16 or younger. State benefits were the main source of income for 61% of the families, and 64% of children were entitled to free school meals. Over three-quarters of families, 76%, lived in council accommodation or private rented accommodation. The mean number of children per household was 2.60 (SD 1.45). Sixty-four percent of caregivers were married or co-habiting.

The mean age of primary carers at the birth of the first child was six years younger (21.78, SD 5.47) than the UK national average (Social Trends, 2007). Overall, 57% of families lived on an income of £64 per person, per week or less, the recognised poverty indicator, more than three times the 17% UK national rate (Social Trends, 2007). The number of families with three or more resident children (43%) was double the UK national average, and there were almost twice as many lone parents (24%) with three or more children in the household (Social Trends, 2007).

Twenty-eight percent of primary carers reported problems with drugs or alcohol within the family, with the father most commonly reported as the person with the problem and 36% reported a member of their family having had a history of crime and/or contact with the police. Depression during the child's first year of life was reported by 37% of carers and subsequent to the first year of the child's life this increased to 61%.

The children had a mean age of 10.5 years and sixty-seven percent of the sample were boys. Fifty-six percent of children received additional help at school and half (50%) of the children were either 'statemented' or involved in the statementing process.

Insert table 1 here

Sample characteristics
At baseline ECBI, scores on both the Intensity and Problem scales exceeded the clinical cut-off, with 71% and 83% of children within the clinical range, respectively. Results were similar for the SDQ scores with the Total score falling within the 'abnormal' range for 74% of children and the Impact Supplement score exceeding the clinical cut-off for 72% of children.

The mean parental depression score, on the BDI, fell within the 'moderate to severe' range with 79% of parents scoring at or above the cut-off for mild depression. Other

studies of conduct disordered children report depression levels in parents of around 50% (Alpern & Lyons-Ruth, 1993).

Mean baseline parenting scores for the primary carers were notably higher than the clinic referred population mean score (Arnold et al., 1993) suggesting that parenting practices reported by parents in this sample were problematic.

The data reported above demonstrate that the sample accurately represented the intended PEIP target population of high-risk children with predominantly disadvantaged and stressed parents.

Results
Paired pre- and post-course data was available for between 45 and 51% of children depending on the measure so prior to commencing an analysis of these data a comparison was run between those for whom pre- and post-course data were available. This revealed no significant difference between those with or without post-course data on either key demographics or any of the three outcome measures (p > .05 for all comparisons). The data that follows describes first the results for children where matched pre- and post-course data were available (Table 3) and then the analysis of the data using an intention to treat (ITT) analysis, in which those children for whom no follow-up data are available are assumed to have remained unchanged and their baseline scores are inserted into the analysis (table 3). This conservative form of analysis allows greater certainty in interpreting the findings.

Insert tables 2 and 3 about here

Child Behaviour
Paired t-tests showed that there was a significant difference between the pre- and post-intervention scores for both ECBI scales (Intensity: t (120)=8.54, p<.001; Problem: t (120)=11.16, p<.001). At follow-up, parental report of problematic child behaviour reduced significantly on both ECBI scales and the mean Intensity score dropped below the clinical cut-off at follow-up. At baseline 86 (71%) of caregivers rated their child's behaviour as above the clinical cut off and, at follow-up, this had reduced to 53 (44%), a reduction of 27% of children in the clinical range (p<.001). The mean Problem Scale follow-up score also dropped below the clinical cut off at follow-up, 100 children (83%) scored within the clinical range at baseline and only 51 (42%) at follow-up, demonstrating a reduction of 41% in the number of children within the clinical range (p<.001). The ITT analysis of data also demonstrates a highly significant reduction in scores at follow-up with medium effect sizes maintained.

Insert Figures 1 and 2 here

A significant difference was found between the pre- and post-intervention scores for the SDQ total score using a paired t-test (t (120)=5.08, p<.001). The mean SDQ Total score showed a significant reduction (p<.001) in child problems and this was also evident in three of the four subscale scores, *Emotional problems, Conduct problems*, and *Hyperactivity*. There was also a significant increase in positive social behaviours as measured by the *Pro-Social* scale. At baseline, 90 (74%) of parents reported their child's behaviour as at, or exceeding, the cut off for 'abnormal behaviour' (17-20), at follow-up this reduced to 63 (52%), a reduction of 22%. There was also a significant difference between the pre- and post-intervention scores for the *Impact Supplement*

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SDQ subscale (t (113)=2.74, p<.01). The mean *Impact Supplement* score reduced significantly at follow-up (p<.01), yet remained within the range for abnormal behaviour of 2+, despite a reduction of 17% in the total number of caregivers reporting their child's behaviour as problematic. Medium effect sizes were observed. Results from the ITT analysis also demonstrated significant changes and small effect sizes were observed.

Parental Depression
A paired t-test confirmed a significant difference between the pre- and post-intervention scores for the parental depression scale (BDI; t (120)=10.79, p<.001). The mean baseline BDI score was within the 'moderate to severe' depression range but reduced to the lower end of the 'mild to moderate' range at follow-up. At baseline 96 (79%) of caregivers exceeded the clinical cut off of 10 or above, with scores ranging from 'mild to severe' depression. At follow-up this dropped to 51 (42%), a reduction of 37% (p<.001). The significant reduction, and large effect size, demonstrates that the programme was successful in reducing parental depression. ITT analysis also showed significant reductions in BDI score at follow-up whilst again maintaining a medium effect size.

Parenting Skills
A significant difference between the pre- and post-intervention scores was found for the total parenting scale using a paired t-test (t (120)=12.18, p<.001). The parenting scale scores showed a significant improvement in both the total score and all subscale scores (p<.001 for all) and large effect sizes, demonstrating that the programme was successful in reducing dysfunctional parenting strategies. Significant reductions in problematic parenting behaviour also remained in the ITT analysis.

Correlations and mediator/moderator analyses
Mediator and moderator analyses were undertaken on the matched pre- and post-intervention data. Mediation analysis seeks to establish causal relationships that have contributed to the positive outcomes. Moderator analysis looks at baseline characteristics and explores whether these factors have a significant influence on outcome. These analyses are reported in full by Hutchings et al., 2009 and are summarised below.

Mediation analyses were run to explore the mediating effects of parenting skills on child behaviour. Variables included baseline child behaviour as the independent variable (IV), change in child behaviour (difference between pre-and post-course ECBI scores) as the dependent variable (DV), follow-up parenting as a mediating variable, (MV). Significant correlations were found between all three variables; therefore, the data was appropriate to run a mediation analysis. A full mediation was found for parenting skills on change in child behaviour, a Sobel test confirmed the mediation was significant (z=-3.00 p=<.003).

Moderator analyses were run in order to assess the effects of identified risk factors on child outcomes, as measured by the ECBI. Six potential risk factors were identified, teenage age parent at birth of first child; family history of drug/alcohol use; family history of crime; parental depression; single parenthood; and poverty, i.e. an income of £64 or less per person per week. Moderator effects were found only for family history of crime and not for age of parent, income, parental depression, or single parent status, suggesting that the programme was equally effective with these broader social

disadvantaging characteristics but that some family issues relating to parental criminality may require additional targeted intervention.

Discussion
The six Authorities that took part in the programme came from across England and had varied experience of using an IY parent programme. Even the more experienced services had predominantly worked with younger children. The leaders that were trained to run the 54 groups were, for the most part, new to the programme but were supported by mentors who provided both basic leader training and fortnightly supervision. The fact that the leaders successfully collected baseline data from 79% of participants was impressive and, although paired follow-up data was only available from 45 to 51% of the sample depending on the measure, those that provided follow-up data were not significantly different at baseline from families for whom only baseline data was available.

The PEIP project aimed to target high-risk children and, both in terms of the demographic profile of the sample and the levels of problems experienced by the children, this was achieved. There was a high percentage of low-income families and lone parents compared to UK national rates. Parents were five years younger than the national average at the birth of their first child. The majority of caregivers left school at or below aged 16, lived on state benefits, and in council or privately rented accommodation.

The results demonstrate, by both methods of analysis, that the programme was successful in improving children's problem behaviours. The scores on the parent reported ECBI and SDQ measures show a significant reduction in the frequency of conduct problems and the extent to which these behaviours are considered problematic by the caregiver. The SDQ data showed an increase in pro-social behaviours, and reduced impact of problem behaviours on the child's daily living. The ITT analyses also showed positive outcomes on all measures although effect sizes were reduced.

The improvements in parental mental health demonstrate that the programme was successful in improving caregiver's wellbeing in a sample with high baseline levels of difficulties. This is likely to be due to the transferable skills gained from the parenting programme in building observation, problem solving and realistic goal setting skills that contribute to greater self-control and improvements in relationships with their partners. Levels of depression in caregivers have been shown to decrease in the randomised controlled studies of the Incredible Years Parent Programmes (Webster-Stratton & Spitzer, 1996; Hutchings et al., 2007) and reductions in maternal depression are associated with longer-term maintenance of child behaviour change following parenting interventions (Hutchings et al., 2004).

The significant improvement in parenting skills, suggest that parenting competencies improved and a significant relationship between parental competency and level of child behaviour was demonstrated. The reduction in problematic parenting behaviour also remained significant in the ITT analysis.

Conclusion
This posit is the first demonstration that the IY Parent Programme delivered to children aged 8 and above, in service settings across England, benefited children and their primary caregivers by significantly increasing parenting competencies, reducing

parental depression levels, and significantly improving child behaviour. However that despite highly significant outcomes, as evidence by both statistically and clinically significant effect outcomes, many children remained within the clinical range for behaviour problems and their parents for depression and problematic parenting practices. Additional support may well be needed for these older children to maintain the improvements achieved by some families and to enable more of these children and their families to make significant changes. Longer term follow-up is needed to clarify whether improvements achieved with this age group are maintained, given that at this age the children spend less time with their parents and more in other settings, in school and with their peers. This is not to downplay these results since the home environment continues to exert a significant influence over child behaviour.

These results need replication in a randomised controlled trial that incorporates independent measures of child behaviour and longer-term follow-up, possibly including the introduction of parallel interventions in other, particularly educational, settings. Longer-term follow-up is of particular importance given the likelihood that the problems have existed for some time and that children in the age range eight and above are entering the period during which the problematic behaviour of conduct disordered children starts to impact significantly on those around them through violence, criminal behaviour and substance misuse (Patterson, 1982, 1986).

One of the most impressive features of this study is the fact that these results were achieved by staff, many of whom were new to the programme. It is important to recognise how skilled a task it is to engage and retain high risk families in a group setting. The data were collected from parents attending 54 groups (mean 9.5 per group) by a large number of staff working in service settings for whom both the intervention and the data collection were new experiences. They are to be congratulated for their commitment to, and support for, this project and for the achievements reported in this paper.

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Primary Carer*	Biological Parent*	Age left school*	Age at birth of 1st child*	Income Source*
Female 299 (100%)	286 (95%)	≤16 yrs 179 (64%)	N = 279 Mean 21.78, s.d 5.47	State benefit 163 (61%)
Income per week*	**Housing***	**Marital Status***	**Children per household***	**Problems - drugs/alcohol***
≤£64 159 (57%)	Council/privately rented 217 (76%)	Married/cohab 134 (64%) Single 74 (36%)	N =300 mean 2.60 s.d.1.45	80 (28%)
Family history of crime*	**Depression - 1st year***	**Depression after 1st year***	**3+ children***	**Lone parent - 3+ children***
102 (36%)	106 (37%)	171 (61%)	129 (43%)	70 (24%)
Sex of child*	**Age of child***	**Additional school help***	**Involved in statement process***	**Free school meals***
M 199 (67%) F 100 (33%)	N = 300, mean10.5 (s.d. 1.63)	155 (54%)	116 (50%)	176 (64%)

Not all respondents answered every question and percentages were calculated based on the numbers of respondents for each category

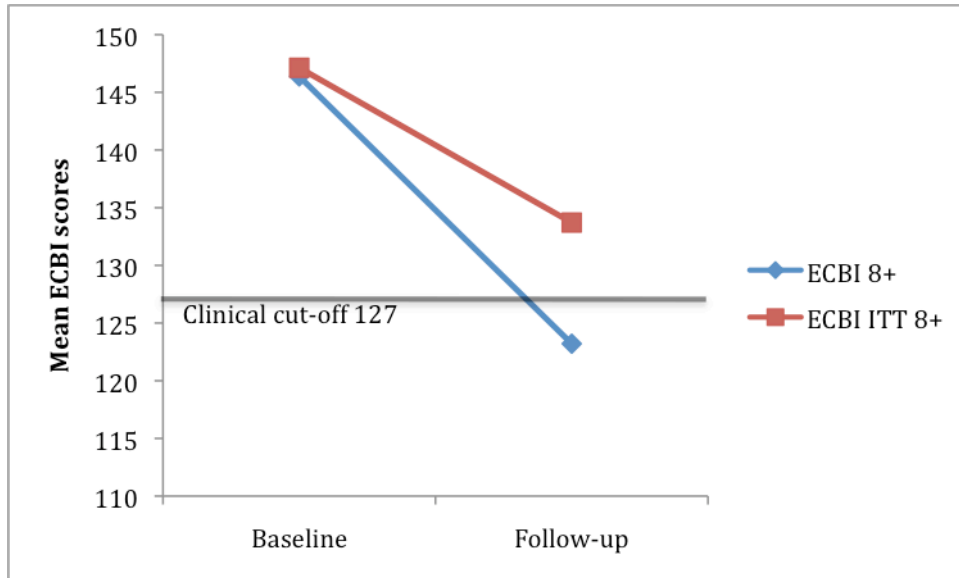Table 1. Demographic information

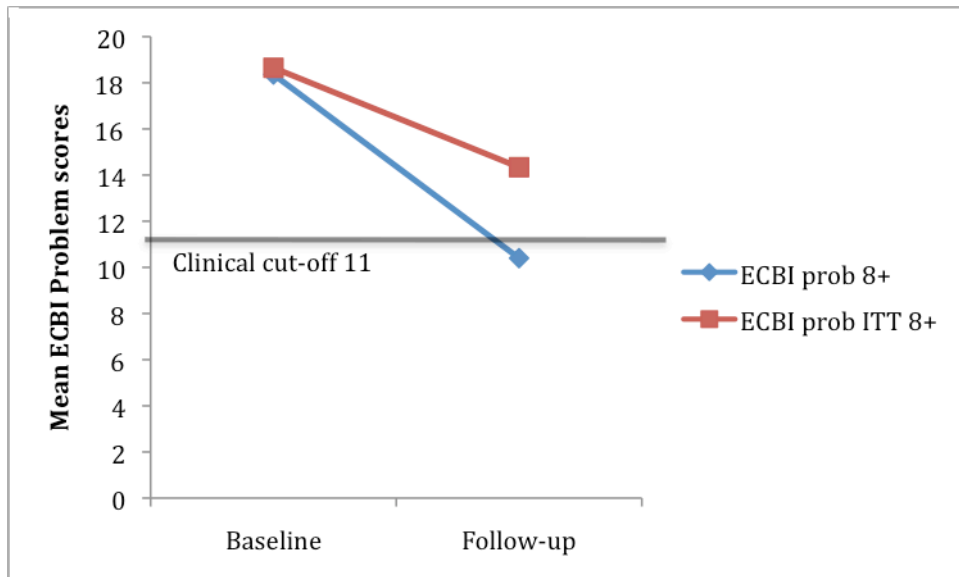*Figure 1. Baseline and F/U mean ECBI Intensity scores*

Figure 2. Baseline and F/U mean ECBI Problem scores

Outcome Measures (n)	Cut-off	Baseline Mean (SD)	Follow-up Mean (SD)	p-value	Effect size (Cohen's d)
ECBI Intensity (121)	127	146.38 (35.98)	123.21 (41.14)	<.001*	0.6
ECBI Problem (121)	11	18.36 (8.28)	10.40 (9.10)	<.001*	0.9
SDQ Total (121)	17-20	19.86 (6.91)	17.14 (7.68)	<.001*	0.4
SDQ Impact (114)	2+	4.09 (4.34)	3.30 (4.22)	<. 01**	0.2
BDI (121)	Mild-mod (10-18) Mod-severe (19-20)	20.18 (12.32)	11.14 (10.12)	<.001*	0.8
Arnold-O'Leary (121)	3.1	3.74 (.85)	2.86 (.84)	<.001*	1

*Significant to p-value <.001

** Significant to p-value <.05

Table 2. Pre- and post-intervention outcomes (matched sample data).

Outcome Measure (n)	Cut-off	Baseline Mean (SD)	Follow-up Mean (SD)	p-value	Effect size (Cohen's d)
ECBI Intensity (288)	127	147.13 (38.35)	133.71 (41.37)	<.001*	0.3
ECBI Problem (277)	11	18.65 (8.26)	14.34 (9.55)	<.001*	0.5
SDQ Total (275)	17-20	19.94 (6.87)	18.15 (7.53)	<.001*	0.2
SDQ Impact (269)	2+	4.49 (4.23)	3.95 (4.29)	<.001*	0.1
BDI (274)	Mild-mod (10-18), Mod-severe (19-20)	19.65 (12.42)	14.69 (12.22)	<.001*	0.4
Arnold-O'Leary (269)	3.1	3.74 (.85)	3.20 (.95)	<.001*	0.6

*Significant to p-value <.001

Not all data sets were complete at baseline so data included in the ITT analysis are for participants for whom a completed baseline score was available for that measure (90 – 96% of all participants depending on the measure)

Table 3. Pre- and post-intervention – Intention to Treat analysis.