

A pilot trial of the Incredible Years® Autism Spectrum and Language Delays Programme

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Editorial comment

The authors of this paper are based at the Centre for Evidence Based Early Intervention at Bangor University, and in the Specialist Children's Services in Anglesey and Gwynned. Their study is the second in our journal on the Incredible Years® programme for parents of children on the autism spectrum. The Incredible Years® programme was not originally designed for parents of children with autism, but has recently been adapted. This pilot study explores the acceptability and feasibility of the programme in the UK. When interventions are designed and tested in other countries (in the US in this case), it is important to test how it works in the UK, as we have a different school and healthcare system. The promising results in this small pilot study suggest that larger research studies are now needed.

Introduction

Autism is estimated to affect up to 700,000 people in the UK, more than one in 100 in the population with more boys than girls diagnosed (National Autistic Society, 2015). There are three main areas with which people with autism have difficulty: communication, social interaction, and social imagination (National Autistic Society, 2015).

Problems with communication are a strong predictor of externalising maladaptive behaviour (Hartley et al, 2008) and these behavioural challenges, as well as child emotional problems, can cause the caregiver more distress and mental health problems than the core features of autism (Hastings et al, 2005; Herring et al, 2006). The National Institute for Health and Care Excellence (NICE) recommends that research should focus on group-based parent-training interventions that help parents learn skills to deal with these behavioural

challenges before they become problematic (National Institute for Health and Care Excellence, 2013).

A review by Matson et al (2009) of parent training for parents of children on the autism spectrum found that it helped parents to develop new skills that they could use at home. Furthermore, parent training is effective in reducing behavioural problems in children on the autism spectrum, improving parenting styles, and increasing parents' ability to facilitate the development of their children's communication skills (McConachie et al, 2005; Whittingham et al, 2008). Group parent training has the added benefit of providing social support (Dababnah and Parish, 2014) and shows promise as a valuable resource to help parents.

The Incredible Years® (IY) basic parent programme is a group-based programme for parents of children aged 3

to 6 years. It encourages positive relationships between the parents and their children through group-based, weekly sessions (Webster-Stratton, 2011). It teaches parents how to play with their children, how to develop their social and emotional skills and positive parental discipline practices. There is considerable evidence demonstrating the effectiveness of this programme in decreasing problematic behaviour in children (Webster-Stratton, 2011; Hutchings et al, 2007) and in reducing stress and depression in parents (Hutchings et al, 2012; Charles et al, 2013). Dababnah and Parish (2014) conducted a pilot study in which they tailored the basic IY programme for parents of children on the autism spectrum. They had a positive response to the programme from parents although parents felt that the video examples of parents and children were not applicable due to their not depicting children with autism. A subsequent feasibility study was conducted and the results supported the pilot study, indicating that the IY programme was acceptable to parents of young children on the autism spectrum (Dababnah and Parish, 2016). Since this study a new IY parenting programme, specifically targeting parents of children on the autism spectrum and/or with communication difficulties, has been developed (Webster-Stratton, 2015). The present study aims to establish the response of parents of children on the autism spectrum to the new IY Autism Spectrum and Language Delays Programme and to trial possible evaluation tools. The course was being run for the first time in the UK.

The programme

The IY Autism Spectrum and Language Delays Programme is delivered in 12 weekly, two-hour sessions. It is designed for parents of young children (aged 2 to 5 years) who have been diagnosed with autism and/or with language delay. There are eight topics: (1) child-directed narrated play; (2) pre-academic and persistence coaching; (3) social coaching; (4) emotion coaching; (5) developing imagination through pretend play; (6) promoting children's self-regulation skills; (7) using praise and rewards to motivate children; and (8) effective limit setting and behaviour management. The programme uses video vignettes, that include examples of parents and children on the autism spectrum, role play to practice skills, and home activities (Webster-Stratton, 2015).

In this pilot study, the programme was delivered by two clinical psychologists, one of whom, the first author, is certified to deliver the training in the basic parent programme and the other who had been trained to deliver the IY basic parent programme.

The parents

Parents of children aged between 2 and 5 who had been, or were in the process of being, assessed by Derwen (the integrated team for children with disabilities, Gwynedd), or Specialist Children's Services (Anglesey) were invited to take part. Nine parents enrolled for the course, eight mothers and one father who attended the sessions with his partner. Nine children were represented, seven individual children and one pair of twins. Eight of the nine parents completed the programme and one parent (the parent of twins) withdrew after attending three sessions. Parents attended a mean of 8.33 sessions.

Table 1 describes the characteristics of the nine children and their parents as reported before the start of the course. The parents had a mean age of 34.89 years. The children had a mean age of 4.56 years, with 66.7 per cent having a diagnosis on the autism spectrum and 33.3 per cent being in the assessment process.

The course evaluation measures

As part of the programme, parents completed a brief session evaluation at the end of each session and a fuller evaluation at the end of the course. Following the course parents also completed a structured interview with a researcher.

The Incredible Years® Autism Programme Weekly Evaluations (www.incredibleyears.com) has five items regarding the helpfulness of: (1) video vignettes; (2) group leader teaching; (3) group discussions; (4) the use of practice exercises; and (5) home activities. Responses are rated on a four-point scale: not helpful, neutral, helpful, or very helpful. Participants completed the evaluations at the end of every group session.

The Incredible Years® Autism Programme End of Course Satisfaction Questionnaire (www.incredibleyears.com) is given to parents at the end of the last session.

Table 1: Characteristics of the eight parents and nine children. SD: standard deviation

	Mean	SD
Mean age parent in years	34.89	5.49
Mean age child in years	4.56	1.21
	N	%
Marital status		
Single	1	12.5
Married	4	50.0
Cohabiting	3	37.5
Relationship to child		
Biological parent	8	100
Parent education		
Left school 13 -16	3	38.0
Secondary 16 - 18	3	37.5
Professional qualification without degree		
Masters degree	1	12.5
Partner education		
Left school 13 -16	2	28.6
Secondary 16 - 18	3	42.8
Other	2	28.6
Ethnicity		
White/Northern European	8	100
First language		
English	7	87.5
Welsh	1	12.5
Child health and development		
Diagnosed with ASD	6	66.7
Currently being assessed	3	33.3

It covers five main areas: (1) the overall programme, (2) usefulness of teaching format, (3) usefulness of specific parenting techniques, (4) evaluation of the group leaders, and (5) the parent group. Items are rated on a seven-point scale with one a negative response, four neutral and seven a very positive response. For example: Extremely useless, Useless, Slightly useless, Neutral, Somewhat Useful, Useful, and Extremely Useful.

The post-course semi-structured interview was conducted after programme completion to assess parental satisfaction with the programme. Parents were asked:

1. Has the programme helped you and, if so, which aspects in particular?
2. Has the programme helped you to understand your child more?
3. Did the programme have an impact on your parenting?
4. What could be improved and what would you keep or change?
5. Have you accessed any other therapy/intervention and, if so, how did it compare with the IY programme in terms of usefulness?

Exploratory use of standardised measures

During baseline and follow-up visits parents were given four standardised questionnaires to complete and a brief observation of the parent and child interacting in a play situation was recorded.

The Warwick Edinburgh Mental Well-Being Scale (Tennant et al, 2007) has a 14 item scale that was developed to monitor mental wellbeing in the general population and for use in projects that aim to improve mental wellbeing. It has been used in several studies of parenting programmes and has shown significant improvements for parents following attendance (Lindsay et al, 2008; Hutchings et al, 2015).

The Strengths and Difficulties Questionnaire (Goodman, 1997) is a 25 item scale that has five subscales: Emotional problems, Peer problems, Hyperactivity,

Conduct problems and Pro-social behaviour. It has been used to screen for behaviour associated with conduct problems in many studies (Hutchings et al, 2007; Jones et al, 2008; Hutchings et al, 2011).

The Arnold-O'Leary Parenting Scale (Arnold et al, 1993) is a 30 item parent self-report measure that has three subscales; 'Laxness' suggesting that the parent is not monitoring the child or their behaviour sufficiently; 'Over-reactivity', suggesting that the parent overreacts and displays outbursts of anger or irritability; and 'Verbosity' which refers to lengthy verbal responses to the child's inappropriate behaviour. It has been used in several studies and shown significant improvements following attendance at a parenting programme (Hutchings et al, 2007; Lindsay et al, 2008).

The Autism Impact Measure (Kanne et al, 2014) is a 25-item scale which reports frequency and impact of behaviours associated with autism. The Autism Impact Scale is a reliable and valid measure of frequency and impact of core features of autism.

The Dyadic Parent-Child Interaction Coding System (Eyberg and Robinson, 1981) is an observational assessment of the quality of parent-child interactions. It has shown significant improvements in a number of categories following attendance at a parenting programme (Hutchings et al, 2007; Hutchings et al, 2015). Only parent behaviour was coded and the categories used were positive parenting, commands, social-emotional skills coaching, negative parenting and reflective statements. During the home visit a ten minute video recording of the parent playing with their child was taken. Before recording, parents were instructed to spend ten minutes playing with their child as they normally would.

Immediately following the programme a home visit was arranged to record another ten minute video of the parent and child playing together, and to collect the follow-up questionnaires.

Results

Parental satisfaction

Throughout the programme, all components of the weekly parent evaluations were rated as helpful or very helpful, with a mean score of over three on all components where three represented satisfied and four very satisfied (see *Table 2*).

Table 2: Mean weekly satisfaction results

Programme aspect	Mean rating	SD
Videos	3.35	0.31
Teaching	3.67	0.31
Group discussion	3.77	0.33
Practical exercises	3.07	0.51
Homework	3.30	0.32

The results from the final satisfaction questionnaire show that the parents rated the programme highly (see *Table 3*). Four components were rated at above six out of a possible seven, with the programme overall having a mean rating of 5.74. A rating of five indicated somewhat useful, six indicated useful and seven extremely useful.

Table 3: Mean overall course satisfaction results

Items	Mean score	SD
Programme overall	5.74	0.37
Teaching format	6.14	0.35
Parenting techniques	6.27	0.39
Group leader	6.71	0.19
Parent group	6.84	0.18

Semi-structured interview

All eight parents who completed the programme found it helpful. The elements they found most helpful were discussions about the homework activities, learning how to ignore unwanted behaviour and meeting other parents. They all reported that it had an impact on their parenting as it helped them to see things from their

child's point of view. It also made them think about why certain behaviours may be occurring and how to change the way that they responded to it. To the question, "Which aspects in particular did you find helpful?" one parent said:

"Meeting the other parents was the number one thing. All the tips have been brilliant. Knowing what to focus on especially using positive suggestions rather than commands."

When asked what could be improved, three parents felt that the programme was great as it was, that every element was necessary and nothing needed changing. Three parents felt that the sessions (two hours) would benefit from being longer as at times there wasn't sufficient time to fully explore the homework and fit in all of the vignettes. One parent said:

"Homework was a bit challenging, good to have it, but difficult to write it down when you have so much on and sometimes I felt bad that I couldn't do it."

One aspect that was mentioned as a barrier for parents attending the sessions was course location. Several parents travelled considerable distances, some on public transport. One parent said:

"It cost a lot between crèche and buses, plus time to get to the venue, which made it hard to attend the group."

Five parents had accessed other interventions including the Pre-school Autism Communication Trial (PACT), a communication-based therapy for young children on the autism spectrum, and music therapy. Four parents reported that the IY programme provided them with additional information and skills. They said that the IY programme gave them all of the tools that they needed and helped them to change their behaviour in order to help their children. One parent said "Incredible Years® was very helpful as it was very practical." Overall parent satisfaction was high.

Baseline standardised measures

At baseline, parents were reporting good parenting skills, with scores for the Arnold-O'Leary scale close to, or below, the means reported for parents of a non-clinic population. This suggests that parents were already skilled at

baseline. The score for over-reactivity, in particular, was low relative to the non-clinic parent means with parents reporting very low levels of anger towards, and frustration with, their children. Parental mental wellbeing was close to the national median and parents were showing low levels of negative parenting in the observation. This suggested that overall parents were already doing an excellent job in supporting their children.

Reports on their children's behaviour matched national studies recording significant levels of behavioural challenges. The median scores reported for behavioural difficulties on the Strengths and Difficulties Questionnaire were at, or above, the borderline problem cut-off for all but one of the sub-scales and for the total difficulties score (see *Table 4*). The reported hyperactivity scale scores were particularly high with a mean of nine with the borderline cut-off being six. The score on the pro-social scale of two was well below the mean of five indicating a low level of pro-social skills.

Table 4: Baseline characteristics for child behaviour as rated by parents on the Strengths and Difficulties Questionnaire

Parent-report	Baseline Median (range)	Cut-off ^a
Emotional	3.00 (0-8)	4
Conduct	3.00 (2-4)	3
Hyperactivity	9.00 (8-10)	6
Peer	6.00 (2-6)	3
Pro-social*	2.00 (2-5)	5
	Mean (SD)	Cut-off^a
Total difficulties	20.50 (1.34)	14

^a represents the borderline cut-off for the Strengths and Difficulties Questionnaire

*This scale scores as a positive score (low score = low pro-social skills)

Post-course results from the standardised questionnaires and observations

Complete sets of data were collected for seven mothers and their children. For the Strengths and Difficulties Questionnaire, only five sets were valid because of the high number of missing items in the responses from two parents.

Paired t-tests did not show any significant differences between baseline and follow-up for the Arnold-O’Leary parenting scale or Warwick-Edinburgh Mental Well-being Scale. However baseline scores for both of these measures showed that parents generally had good mental wellbeing and good parenting skills.

Paired t-tests on child behaviour outcomes showed a significant difference between baseline and follow-up on two Strengths and Difficulties Questionnaire sub-scales, a significant reduction in peer problems: $t(4) = 3.13, p = .035$; and a significant improvement in pro-social skills: $t(4) = -3.76, p = .020$. No other significant differences were reported although the total problem score had reduced (see *Table 5*). There were no significant difference between baseline and follow-up for the Autism Impact Measure.

Table 5: Baseline and follow-up child behaviour outcomes using Strengths and Difficulties Questionnaire

	N	Baseline median (range)	Follow-up median (range)	p-value
Emotional	5	3.00 (0-8)	4.00 (0-7)	.896
Conduct	5	3.00 (2-4)	3.00 (2-4)	.374
Hyperactivity	5	9.00 (8-10)	10.00 (8-10)	.755
Peer	5	6.00 (2-6)	4.00 (2-5)	.035*
Pro-social ^a	5	2.00 (2-5)	3.00 (3-6)	.020*
		Mean (SD)	Mean (SD)	
Total difficulties	5	20.50 (1.34)	18.50 (1.69)	.656

* Significant at $p < .05$

^aThis scale scores as a positive score (low score = low pro-social skills)

Observation scores

Paired t-tests showed no significant differences between baseline and follow-up although the data showed trends in the expected direction for positive parenting which increased and a reduction in commands (as encouraged for child led play). Parental reflective statements showed a non-significant increase at follow-up (as encouraged for promoting language skills).

Discussion

The findings indicate that the IY Autism Spectrum and Language Delays programme is acceptable to parents of children on the autism spectrum. The high satisfaction scores reported by the participants support the findings of Dababnah and Parish’s (2016) study. The parents found the video vignettes particularly helpful as they depicted children on the autism spectrum. This is in contrast to Dababnah and Parish’s (2016) study where the vignettes were rated lowest in the satisfaction. Parents also reported that the group discussion and support were very useful, providing an opportunity to share problems and solutions with people in a similar situation (Furlong and McGilloway, 2012).

At baseline parents reported good parenting skills and mental wellbeing but nevertheless were reporting significant problems for their children, with the total problem score on the Strengths and Difficulties Questionnaire well above the borderline cut-off. Despite this being a very small sample the results showed significant changes on two sub-scales, a significant increase in pro-social behaviour and a significant reduction in peer problems.

The parents that were recruited for this study were already receiving support for their children and some had been involved in other programmes aimed at helping children on the autism spectrum however the IY Autism Spectrum and Language Delays programme was seen as providing additional practical skills.

The main limitation in this pilot study was the small sample size: nine participants, with eight sets of data at baseline and seven at course completion (the couple completed questionnaires together). Another limitation was that it relied mainly on parental report measures, although follow-up measures were collected by an independent researcher.

Concluding comments

A small sample of parents who were already receiving support from health services with their children were recruited to trial the IY Autism Spectrum and Language Delays parent programme. The high satisfaction scores indicated that it was very acceptable to the parents of children on the autism spectrum and the significant improvements in pro-social and peer problem subscales showed a small positive effect on children's behaviour. The IY Autism Spectrum and Language Delays programme shows promise as an effective means to help parents of children on the autism spectrum. The programme was extremely well received, retaining eight of the nine parents and was reported as helpful or very helpful by parents. This suggests that further study using a larger sample and a control group would be justified.

The Bangor University Centre that undertook this pilot trial has been successful in obtaining grant funding for two years from Autistica to undertake a pilot randomised controlled trial of the programme in three centres across Wales starting in April 2016.

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