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## Summary

### Background

This summary report presents key findings from a large evaluation of the effectiveness of the *Incredible Years BASIC Preschool/Early School Years Parent Training* (IYP) programme as an intervention for Irish children (aged approx 3-7yrs) with emotional and behavioural difficulties. The evaluation involved three separate, but inter-related sub-studies including: (1) an experimental study (or Randomised Controlled Trial (RCT)); (2) a qualitative study involving interviews with parents who were included in the RCT in order to assess their experiences and views of the programme; and (3) a cost analysis of the IYP programme.

### Methods/Design

A total of 149 parents with children with persistent conduct problems (as indicated by scores on the Eyberg Child Behaviour Inventory (ECBI) were included in the evaluation. Participants were randomly allocated on a 2:1 ratio to receive the IYP intervention (n=103), or to a waiting list control (n=46) group. Assessments were carried out before receiving the intervention (at baseline) and six months later, using parent reports and, for a reduced sub-sample of participants, direct observation in the home. Twelve participants did not participate at the follow-up time point (8 from the intervention group). A series of one-to-one qualitative interviews was conducted with 32 intervention parents in order to elicit their views and experiences of the programme. The results of the quantitative assessments of children were combined with data on the use of child health and welfare services and the costs of delivering the programme, to appraise the cost-effectiveness of the IYP programme.

### Intervention

The *Incredible Years BASIC Preschool/Early School Years Parent Training* (IYP) consists of 12-14 weekly, 2-hour, parent-group training sessions guided by behavioural and social learning principles and delivered by trained IYP facilitators.

## Results

### Sub-study 1 - The experimental test of IYP

There were high levels of child behavioural problems, significant parental distress and considerable socio-economic disadvantage recorded at baseline. Statistically significant improvements in child behaviour, parenting competencies and well being, were observed six months later for the IYP group only. A statistical analysis of scores on the primary measure of programme effectiveness, the ECBI, indicated significant post-intervention differences between the intervention and waiting list control group. An intention to treat analysis of covariance (ANCOVA) revealed a mean difference between groups of 21.45 (10.7 to 32.20,  $p < 0.001$ , effect size 0.7) and 5.92 (3.16 to 8.67,  $p < 0.001$ , effect size 0.75) respectively on the ECBI intensity and problem scales.

### Sub-study 2 - The qualitative study of parents' experiences

The above results were supported and amplified by the qualitative study which highlighted the valued role and non-biased approach of the IY facilitators, the benefits of the group-based format and the process of learning key principles and skills. Some difficulties and challenges were also reported, such as the discomfort experienced by some parents regarding the concept of positive attention and the continuing post-programme behavioural challenges, whilst the experiences of 'drop-out' parents (n=7) were also examined.

### Sub-study 3 - The cost analysis

The estimated cost of delivering the programme was €1463 per parent/child. Further analysis indicated that, overall, it would cost €2304 to bring the average child in the study to below the clinical cut-off point for serious behavioural problems (i.e. to achieve significant meaningful improvement). The results showed an attendant decline in service use in the intervention group, as well as significant long-run benefits that compare favourably to popular alternative programmes.

## Conclusions

The findings combine to illustrate the effectiveness and cost-effectiveness of the *Incredible Years BASIC Preschool/Early School Years Parent Training* programme as a means of reducing early onset conduct problems amongst young children in community-based settings and in improving parenting skills, competencies and the well being of family members.

**Trial Registration:** ISRCTN29121945.

## Background: What is the Study About?

Children with emotional and behavioural difficulties (EBD), such as aggressive and hyperactive behaviours, are at increased risk of juvenile delinquency, early school leaving, poor occupational status and alcohol and substance abuse. Considerable evidence suggests that the quality of parenting that children receive has a major influence on the likelihood of EBD occurring in childhood (e.g. Collins et al, 2000). The lack of a positive and caring parent-child relationship, characterised by insecure attachment and inconsistent and harsh disciplinary practices, is associated with an increased risk of early conduct and emotional problems. Positive parenting also promotes healthy child adjustment and mediates the effects of risk factors, such as genetic susceptibility and social disadvantage (Shaw & Winslow, 1997).

A number of researchers and policy makers have recently argued that the most effective way of dealing with long-term disadvantage and the intergenerational transmission of social problems is through early childhood intervention and, in particular, policies and programmes aimed at supporting the family in early childhood development. Parenting programmes are now well recognised as a means of intervening positively to change the maladaptive life path associated with early onset conduct problems in childhood. Parent programmes aim to improve parent-child relationships and modify parenting practices by, amongst other things, replacing negative or harsh parenting techniques with more competent parenting strategies. There is now strong empirical support for the effectiveness of parent programmes in the management of early EBD (e.g. Gross et al, 2003).

The *Incredible Years BASIC Preschool/Early School Years Parent Training* (IYP) programme (Webster-Stratton, 1979) is a brief, group-based intervention guided by the principles of behavioural and social learning theory. It consists of 12–14 weekly sessions, each of which lasts for 2 to 2.5 hours. The programme uses videos, role play, modelling and group discussions to help parents rehearse and adopt positive parenting strategies. Parents are encouraged to use praise and incentives to reinforce positive child behaviour and to cope with problem behaviour with non-aversive parenting strategies. Improvements in parent-child relationships are also targeted through the promotion of child-directed play. The IYP programme is one of the few 'model' programmes designed to tackle the issue of EBD. Model programmes are scientifically tested programmes with evidence of long-term effectiveness. Both the U.S. Office of Juvenile Justice and Delinquency Prevention and the US Center for Substance Abuse Prevention (CSAP) have endorsed the IY series as a model programme for reducing emotional and behavioural problems in children. Considerable research has also been undertaken in the US to assess the IY BASIC parenting programme, particularly with clinical samples, and the evidence, to date, suggests that the programme significantly improves parent-child interactions and child behaviour outcomes (e.g. Webster-Stratton, 1989; Webster-Stratton & Hancock, 1998; Reid & Webster-Stratton, 2001; Reid et al., 2004). More recent research in the UK, Canada and Norway has also shown very promising results (e.g. Scott et al., 2001; Gardner et al., 2006; Hutchings et al., 2007; Larsson et al., 2009).

However, more research is needed to establish the universal utility of the programme, its transferability to other cultures and settings and its cost-effectiveness within different contexts.

In recent years, governments, policy makers and economists have begun to give serious consideration to the cost implications of behavioural problems amongst young people and the attendant cost effectiveness of programmes aimed at addressing these problems (Edwards et al., 2007; Muntz et al., 2007). For example, Scott et al (2001) found that the cost of public service use at age 28 was 10 times higher for people with childhood conduct disorders (£70,019; €104,416, \$137,450) than those without (£7,423; €11,069, \$14,571). Furthermore, Gregg & Machin (1999) report that indicators of childhood behavioural problems at age 7 - even after controlling for other factors such as cognitive skills - have significant negative effects on school attendance and contact with police (with both outcomes measured at age 16), as well as on the probability of staying on at school after the compulsory school leaving age. Additionally, in their survey of early childhood intervention programmes in the U.S., Carneiro and Heckman (2003) note that early interventions can be highly effective in reducing crime, promoting social skills and integrating disadvantaged children into mainstream society, and that some of the most effective interventions promote non-cognitive, social and emotional skills.<sup>1</sup> The Irish context is of particular interest because, despite the unprecedented growth in Ireland over the last 10-15 years, we still have one of the highest rates of child poverty amongst developed countries (UNICEF, 2007).

### The Incredible Years Ireland Study: An Overview

The *Incredible Years Ireland Study* involves a comprehensive and methodologically rigorous, community-based evaluation of the effectiveness of different elements of the IY suite of programmes including, as outlined here, the *Incredible Years BASIC Preschool/Early School Years Parent Training* (IYP) programme. Other programmes that are being evaluated as part of the research evaluation include the *Teacher Classroom Management* (TCM) programme and the *DINA* (child-centred) *Training*. Further findings will be presented on the other two programmes as the study progresses. Thus, the entire evaluation involves three experimental studies, or RCTs, which focus on parent training, teacher classroom management training and a combination of parent, teacher and DINA training respectively. Nested within each RCT, are several sub-studies which are being undertaken in parallel, in order to examine the processes by which the different programmes work (i.e. the process evaluation), as well their cost effectiveness (i.e. the economic evaluation).

<sup>1</sup>Other surveys of early-childhood intervention programmes include Barnett (1995), Brooks-Gunn et al (2000) and Currie (2001). Boocock (1995) also discusses results from research conducted outside the United States.

### Aims and objectives of the current study: The IYP Programme

This report presents a summary of the first set of key findings to emerge from the *Incredible Years Ireland Study*. These focus on the IYP programme and relate only to short-term (six-month) outcomes at this juncture. The specific research questions addressed by the team included:

- To what extent does the *Incredible Years BASIC Preschool/Early School Years Parent Training* programme reduce EBD in childhood?
- Does the IYP programme improve parenting competencies and well being?
- To what extent do outcomes for children and parents change over time?
- What are the experiences of parent participants and which factors facilitate or inhibit the effective implementation of the programme?
- How cost-effective is the programme?

Three separate but inter-related sub-studies were undertaken to address the above questions including: (1) an experimental study (or RCT); (2) a qualitative study involving interviews with parents who were included in the RCT; and (3) a detailed costs analysis. Each of these is outlined briefly below.

### Study Design

#### Sub-Study 1: The experimental study (RCT) of the Incredible Years parent training programme

Firstly, we present key findings from the RCT or experimental evaluation of the programme for children aged approximately 3-7 years (32–88 months) with persistent EBD.

#### Sub-Study 2: The qualitative sub-study

This summary also presents key findings from a qualitative analysis of parent participants and their experiences of taking part in the IY parent training intervention, as well as some of the parent-reported mechanisms by which the programme works.

#### Sub-study 3: The cost analysis

The cost analysis explores the cost-effectiveness fits of the programme across a range of areas and the long-term rate of return to society when compared to alternative interventions.

# Testing the benefits of the IY parenting programme in Ireland: An Experimental Study (RCT)

## How was the experiment conducted?

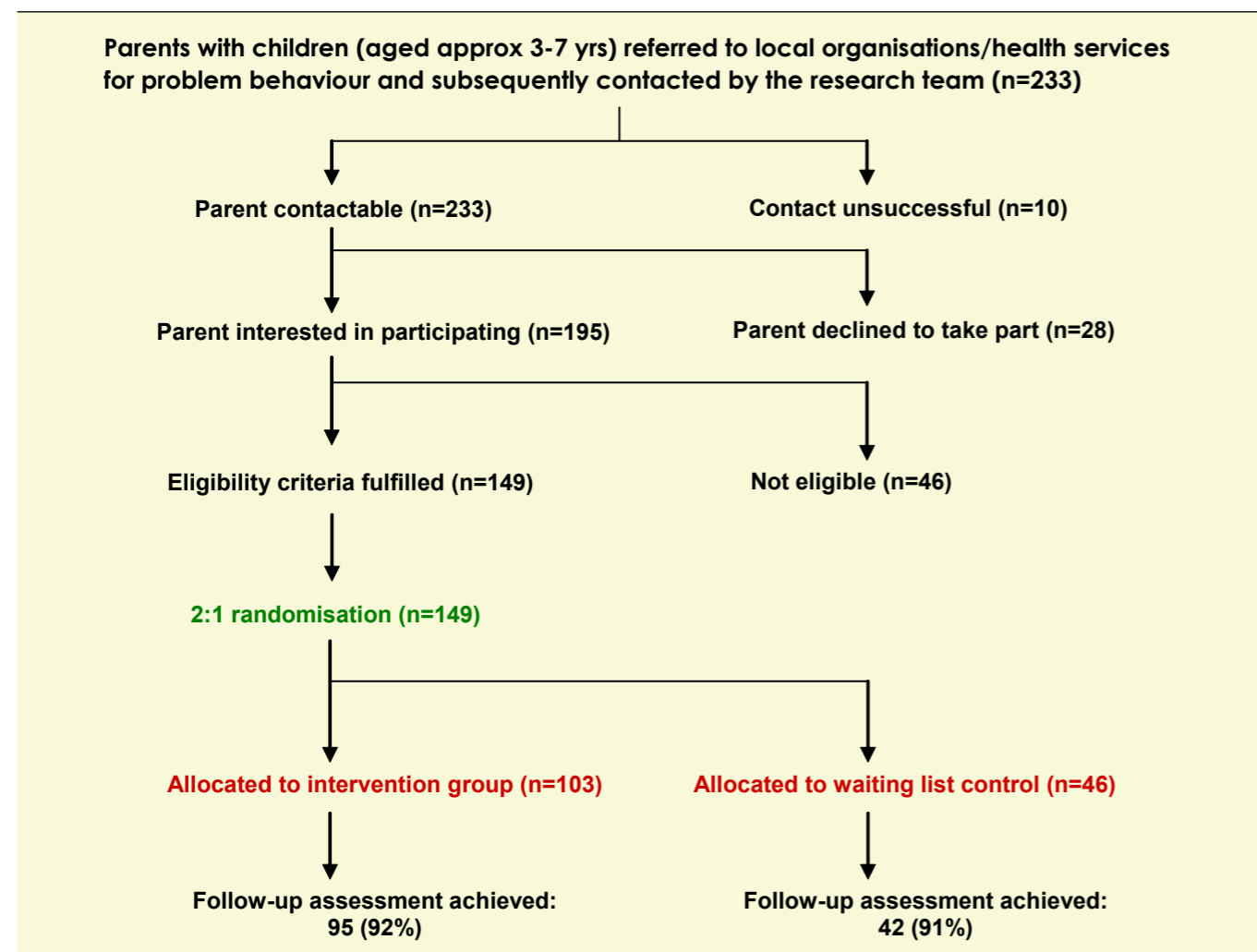
### Participants and settings

A total of 149 families, mainly from socially disadvantaged areas, took part in the trial; 60% of parents were married or co-habiting, 40% were lone parents. Primary caregivers had a mean age of 34 years whilst their children, 60% of whom were boys, had a mean age of approximately 5 years. The primary reasons for referral to the programme were oppositional behaviour and general difficulties in parenting. All index children met the eligibility criteria for inclusion in the study in terms of scoring above the clinical cut-off point on either subscale of the parent report *Eyberg Child Behaviour Inventory* (ECBI; Eyberg & Ross, 1978); this was also the primary outcome measure used in the study (see below).

### Procedure

Participants were randomly allocated, on a 2:1 ratio, to the IY parenting intervention (n=103) (i.e. the 'intervention group'), or waiting list control group (n=46) (see Figure 1). Assessments were carried out at baseline (i.e. prior to the intervention) and six months later in order to assess the nature and severity of EBD over time and any post-intervention changes in child behaviour/adjustment and parenting skills and mental health. A battery of standardised psychometric measures, as described below, was used to assess a range of psychological, behavioural and emotional symptoms and behaviours in both children and their parents. Independent observations of parent, child and sibling interaction were also carried out by trained members of the research team with a sub-sample of participants (n=80). All researchers were blind to the allocation of participants. For a fuller description of the measures used, please see *Appendix 1*.

Fig. 1: Overview of participant recruitment and RCT design



### Child-related measures

The primary outcome measure, the ECBI, was used to assess the frequency and intensity of problem behaviours ('Problem' and 'Intensity Scales' respectively) in the index child; this was also administered to the sibling closest in age (where applicable). The *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997) was used to assess conduct, hyperactivity problems, emotional and peer problems, as well as pro-social behaviours. The *Conners Parent/Teacher Rating Scale* (Conners, 1994) was employed to measure hyperactivity whilst pro-social behaviour and communication were assessed using the *Social Competence Scale* (Fast-Track Project, 2003).

### Parent-related measures

The background, health and well being of parents were assessed using: a *Profile Questionnaire (PDIF)* (demographic and health risks); the *Parenting Stress Index* (PSI; Abidin, 1992) and the *Beck Depression Inventory* (BDI; Beck et al, 1961).

### Independent Observation

The *Dyadic Parent-Child Interaction Coding System* (DPICS; Eyberg and Robinson, 1981) was used to observe parent-child interaction in the home and, in particular, to record incidents of positive and critical parenting practices. All members of the fieldwork team received intensive training in the use of this method (see *Appendix 1*).

### Independent Observation

The Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg and Robinson, 1981) was used to observe parent-child interaction in the home and, in particular, to record incidents of positive and critical parenting practices. All members of the fieldwork team received intensive training in the use of this method (see *Appendix 1*).

### Key findings: short-term outcomes

- At baseline (i.e. pre-intervention), there were no significant differences between participants in the intervention and waiting list control groups with respect to either demographic characteristics (see *Table 1*) or their scores on the psychometric measures (*Table 2*) (thereby indicating that the randomisation procedure was successful).
- As expected, high scores at baseline, on both the ECBI and the SDQ, showed a high prevalence of chronic EBD amongst children whose parents were included in the sample (this was the selection criterion for the study). Scores for conduct problems and hyperactivity on the SDQ indicated problem behaviours to be in the 'abnormal range' whilst difficulties in social interaction and communication skills were also evident; scores for social competence fell outside the normal range for 56% of young children in the sample.

Table 1: Family characteristics at baseline (figures are numbers (%) unless otherwise stated)

	Waiting list controls (n=42)	Intervention (n=95)	Lost to follow-up*	
			Controls (n=4)	Intervention (n=8)
Lone parent (%)**	13 (31)	26 (27)	3 (75)	4 (50)
Separated/Divorced	2 (5)	11 (12)	0 (0)	1 (13)
Large family (> 3 Children)				
Couples	18 (43)	28 (30)	0 (0)	3 (38)
Lone parents	6 (14)	15 (16)	1 (25)	0 (0)
At risk of poverty	25 (63)	62 (68)	2 (50)	5 (53)
Mean age (SD) of mother (yrs) at birth of first child	25 (6.01)	25 (6.35)	19.75 (4.19)	22 (4.67)
Education (left school before finishing secondary)	13(31)	36(38)	2(50)	2(25)

\*No significant differences were found between intervention families who remained in the study and those lost to follow-up.

\*\*Lone parent refers to participants who were single/never married and those in a relationship but living apart

- Statistical analyses highlighted a number of significant differences at follow-up between the intervention and waiting list control groups in both child behaviour and parental well being (see Table 2).
- Specifically, significant reductions were found in the intervention group, on the primary outcome measure – the ECBI intensity and problem scales (see Figures 2 and 3). In other words, intervention children showed significantly fewer problem behaviours post-intervention and parents perceived their child's problems to be less severe than children in the waiting list control group.
- Problem behaviour scores in the intervention group shifted from clinical levels at baseline to within the normal range at follow-up. For example, reduced incidents of behaviours, such as non-compliance (ie. refusal to carry out tasks/obey instructions), temper tantrums, negative physical behaviour (hitting, destroying toys/objects), and overactivity/restlessness, were found post-intervention. By contrast, children in the waiting list control group showed no significant improvements in behaviour and remained well within the clinical range of scores.
- Significant reductions in hyperactive-type behaviours as measured on both the Conners Scale and the SDQ hyperactivity subscale were also evident in the intervention group when compared to the waiting list controls (Table 2)
- There were attendant significant improvements in pro-social behaviour, social interaction and communication amongst children in the intervention group; these were not observed in the waiting list control group (Table 2). Scores relating to peer problems and emotional symptoms also showed some improvement in the intervention group when compared to their waiting list control group counterparts, although these differences were not statistically significant.
- An analysis of the observational data from the parent-child interactions showed a significant decrease in child problem behaviour post-intervention. Critical parenting was also significantly reduced at follow-up. Conversely, an increase in negative behaviour amongst waiting list control group children was observed at follow-up.
- The intervention had a significant positive effect on the health and well being of parents, particularly their mood (Figure 4) as assessed by the BDI. At baseline, moderate levels of depression in parents were found. However, at the six-month follow-up, intervention parents showed a significant improvement in levels of depression when compared to the waiting list control group.

Table 2: Summary of scores on child behaviour measures at baseline and follow-up

	Mean (SD) raw scores				Est mean diff (95%CI), p value	Effect size (95% CI)
	Control {n=46}		Intervention {n=103}			
	Baseline	6 month follow up	Baseline	6 month follow up		
ECBI (I) (127)	159.1 (31.7)	144.9 (33.2)	156.5 (30.0)	121.3 (40.7)	21.45 (10.7 to 32.20), <0.001	0.7 (0.35 to 1.05)
ECBI (P) (11)	20.5v (6.7)	17.6 (8.4)	20.3 (7.0)	11.6 (9.0)	5.92 (3.16 to 8.67), <0.001	0.75 (0.4 to 1.1)
Conners (Clinical cut off = 15)	28.5 (7.1) {45}	27.7 (7.1)	28.4 (6.5) {102}	22.7 (8)	4.96 (3.06 to 6.85), <0.001	0.92 (0.57 to 1.28)
SDQ total deviance (Clinical cut off = 17)	19.3 (6.9)	16.7 (6.3)	18.1 (5.8) {102}	13.5 (6.8) {102}	2.24 (0.6 to 3.87), 0.007	0.48 (0.13 to 0.84)
Social Competence (SCS-P)	16.8 (9.3) {45}	19.1 (9.1)	16.7 (8.2) {99}	25.1 (10.4) {101}	-6.06 (-8.68 to -3.45), <0.001	-0.83 (-1.18 to -0.47)
Child deviance – observations§	21.21 (29.22)	24.71 (27.07)	10.38 (11.48)	6.05 (8.25)	15.11 (7.6 to 22.62), <0.001	1.03 (0.52 to 1.55)

§ Frequency counts in 30 minutes using the DPICS-R (n = 80, 24 Control, 56 Intervention).

Fig. 2: ECBI mean intensity scores for waiting list control and intervention groups at baseline and follow up

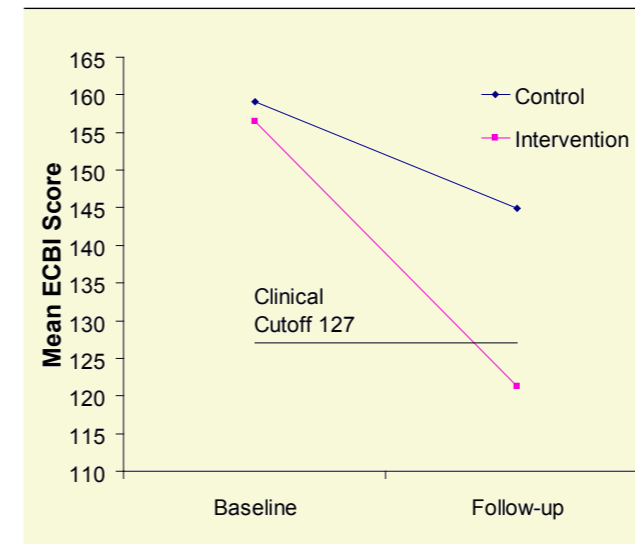


Fig. 3: ECBI mean problem scores for waiting list control and intervention groups at baseline and follow up

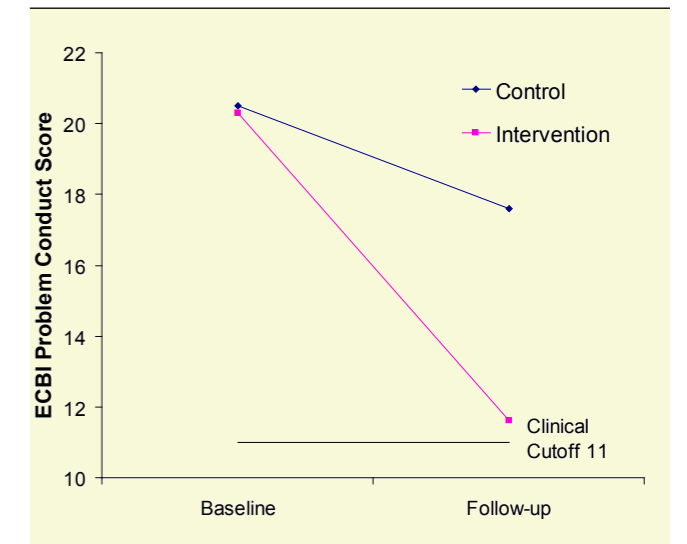
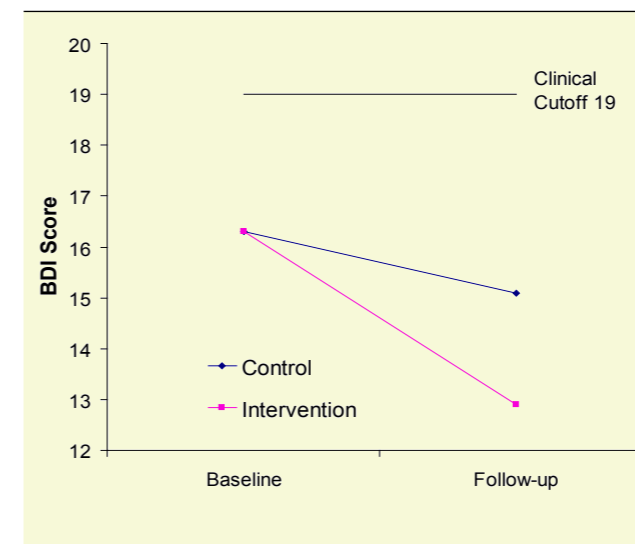


Fig. 4: BDI mean scores for waiting list control and intervention groups at baseline and follow up\*



\* Estimated mean difference 2.7 (0.19 to 5.2), p < 0.05. Effect size 0.39.

## 2. Parents' Experiences of the IY Parenting programme: A Qualitative Study

### How was the qualitative study conducted?

#### Participants and settings

Part of the process evaluation, or qualitative sub-study, involved one-to-one interviews with parents. Interviews were also conducted with other key stakeholders including group facilitators, but the fuller set of findings will be presented at a later juncture.

One-to-one interviews were undertaken with 32 parents; 30 mothers and two fathers of intervention children (aged 3-7 years) with conduct problems. Parents were recruited using a purposive sampling method in which prospective participants were approached for interview on the basis of demographic variables (e.g. their marital status and age and the age and gender of their child) and their membership across the 9 intervention groups. The parents had a mean age of 33 years; 20 were from two-parent families whilst 12 were lone parents. The sample of index children included 20 boys and 12 girls who had a mean age of 5 years. Participants came from different areas within Dublin (e.g. Clondalkin, Tallaght, Dublin 8) and from within Co. Kildare. Twenty-five of the participants had attended most of the programme sessions. Seven parents who dropped out of the intervention were interviewed to provide a 'negative case' analysis. All interviews took place in parents' homes.

#### Procedure/analysis

An interview schedule was devised in order to guide and provide a framework for the interview. All interviews were recorded on a digital recorder and subsequently transcribed verbatim by the research interviewer (MF). The data from the semi-structured interviews were analysed using Interpretative Phenomenological Analysis (IPA; Smith & Osborn, 2003) in order to identify and record emergent themes. The themes were summarised and organised to establish their inter-relationships and generate a number of super-ordinate (or overarching) themes. These included: (1) parents' perceptions of how the programme works (i.e. perceived mechanisms of change); (2) difficulties and challenges they experienced during their participation in the programme; and (3) the experiences of parents who dropped out of the course.

### Key Findings: Short-term Outcomes

The positive outcomes from the quantitative data were supported and amplified by the results of the qualitative analysis. Each of the key themes described above contained a number of sub-themes relating to: positive changes in the child's behaviour; improvements in the parent-child relationship; benefits for siblings; personal benefits for parents; and benefits for the wider family and community networks. A selection of quotations from parent participants are used to illustrate each of the three major themes outlined below.

#### Perceived mechanisms of change

The key mechanisms of change, as reported by parents in the interviews, included:

- the non-judgmental or non-biased support that parents received from group facilitators and other parents and the generally positive atmosphere of the sessions, which helped dispel/normalise feelings of guilt and isolation;
- the experiential and collaborative learning format of the course, involving role play, discussions, homework and feedback that allowed parents to be involved in their own learning;
- the process of learning through key principles and application of skills (e.g. positive attention, reacting calmly and problem-solving, developing empathy, and limit setting) in order to: (a) build a nurturing relationship in which to manage child misbehaviour; (b) gain competence and control in their parenting role; and (c) develop resources such as self-affirmation and utilising social support from other parents and their wider family network.

*Mother (4-year-old boy): "I thought they [the facilitators] were brilliant. You just felt that you could pick up and ring them at any stage and say 'Look, this isn't working for me. I don't know what to do'. It was like an extra support. It wasn't just like a class where you were given the work and you go home. You knew that they were there for you. I don't think the course would have worked if it hadn't been for them... I thought that when I started the course that these people are going to think, 'How awful is she? She must be a horrible mother' but they were very understanding of everyone's problems and everyone was so open and honest with them because they were that way".*

*Mother (4-year-old girl): "I really like the way the group was done, the way it was very inclusive. It was about the parents' experiences. The feedback you got instead of them talking at you. You were very much encouraged to go away and do your homework and then you come back and you give your report on what you did that week. And all of us would learn from that... It kept you focused and you didn't feel abandoned when you left the course".*

*Mother (4-year-old girl): "No-one can annoy me the way my children can annoy me. They just needle you... But you just learn to remain calm and think about things rather than just reacting... And you have your notes and your book and your tips and techniques and you problem-*

*solve that way. So there's less conflict now. I'm calmer and things don't escalate. She [her daughter] doesn't end up as upset because I don't end up giving out to her. I would say it has improved and that's why she's happier and more confident".*

Parents also praised the supports that were put in place to reduce barriers to programme attendance, such as crèche facilities.

#### Difficulties and challenges along the way

Potential barriers to programme participation and success included discomfort and disbelief around the ethos of positive attention and difficulties in implementing limit-setting skills. Continuing behavioural challenges following programme completion (e.g. the child's resistance and rebellion) were also highlighted. Increased conflict with partners in relation to implementing the IY techniques and sibling misbehaviour, were reported by some parents as additional challenges associated with programme participation. Others were also dealing with personal issues as well as social barriers, such as living in inappropriate accommodation and/or in communities with high levels of anti-social behaviour.

*Mother (6-year-old girl): "It's a very Irish thing not to give or accept praise. You know there is this thing: are you making them bigheaded, are you making them cocky, are you giving them too much confidence? But actually it's made them [the child] the opposite - nicer and kinder to other people... But at first when you praise them, I found it really odd, awkward".*

*Mother (5-year-old boy): "We had several rows about it... It's hard to teach your partner the techniques you've learned in the class without sounding like you're the 'know-it-all' but then maybe I was doing it negatively, maybe, by criticising the way he was doing it rather than being positive about it... But now he sees the difference hugely with the kids and I find now that he's copying everything I'm doing and it's all happier all round. I got him onside... eventually (laughs)".*

*Mother (4-year-old girl): "By the end of it you think, 'I am a good parent'... Especially as we used to say, like the neighbourhood around here, it's very hard to raise your children in. This place is overrun with drugs and gangs, whatever. It's a horrible place to raise your children. I personally don't allow my children out to play unless I'm there to supervise because there's children and they're as young as four and five and they are bullies. It is very hard. And like for us to be able to come this far, living in a neighbourhood like this and raising our children the way we are, we are doing good because we're not following the example and just letting the children run out... We take responsibility for our children whereas most of them don't around here".*

#### Experiences of 'drop-out' parents

Reasons for leaving the course were predominantly practical or circumstantial in nature (i.e. starting a new job, illness, or having to care for a sick family member) and all but two of the 7 'drop-out' parents who were interviewed, stated that they would attend the IY programme again at a more convenient time. However, two

of the parents felt that the format of the course did not meet their expectations and had nothing new to offer them. These parents did not accept the concept of positive attention and they also found elements of the course to be patronising or threatening, including the stickers and the nature of the vignettes, or they felt isolated or judged by some of the other parents.

*Mother (6-year-old boy): "I moved onto a CE [Community Employment] scheme so that was like every day so it was more stable and it meant that money was coming in. I kind of had to leave it [the course] - I still kind of kept in touch with here [the IY centre]. I thought it was great. I used to love coming in every Wednesday... Like sticking with play at their age, their pace, constantly praising them, the running commentary and all that. I think that works great with them... He [son] listens to me a lot more - he'll do what I ask him without saying, 'No' or 'Why?' or 'Wait'. And he's always telling me he loves me. Even in school he's doing better on his school reports".*

*Mother (4-year-old boy): "I don't think they understand how hard it can be to be a parent. Like they were all 'happy clappy', all happy about being a parent, and you know there would be days when I couldn't get up out of bed because it's that hard. Can't face into it. They have unrealistic expectations... It took a lot of effort to get to the place... and I was getting no tips or advice about how to deal with my child... like they [other parents] were looking at ye if you said that you'd slap him [son] sometimes because he was so bold. They [facilitators] said, 'You should get down on your knees and talk to him'. I said that if I did that, he would punch me in the face".*

### 3. The Costs of the IY Parenting Programme

The third and final sub-study involved a costs analysis in order to examine the cost-effectiveness of the *Incredible Years BASIC Preschool/Early School Years Parent Training* programme as it is being delivered in Ireland. This was conducted in parallel to the two sub-studies described above and involved the collection of detailed information on the use of social, health and educational services (both at baseline and follow-up) as well as other relevant costs during the study period; these were then incorporated, in the costs analysis, with the results obtained from the RCT assessments described earlier.

#### How was the cost analysis conducted?

##### Service utilisation

A *Service Utilisation Questionnaire* (SUQ; Chisholm et al., 2000) was administered at baseline and post-intervention to elicit information on the frequency and costs of health, social and educational services used during the previous six months, by children in both the intervention and waiting list control groups (see *Appendix 1*). The SUQ yields information pertaining to child health, contact with health services, school services, hospital visits etc as well as questions about the main carer's health and their contact with health services.

##### Unit costs data and costs diaries

Unit costs were collected from a number of sources for each of the key services used by the parents in both the intervention and waiting list control groups. The direct costs per child of running the programme were obtained using 'cost diaries' which were completed by each of the facilitators/group leaders who delivered the programme. Facilitators were asked to record time spent each week on actual session time and home visits/telephone calls, as well as travel costs incurred. As expected, direct wage costs accounted for almost 90% of total costs. Additional expenses (e.g. childminding facilities, food, hall rentals) accounted for most of the remaining costs.

The average total cost per duration of the programme across the 9 intervention groups was €16,102. Thus, on the basis of a mean group size of 11 parents per group (103 parents, 9 groups), this gives an average total cost per client of €1,463. This was the direct training cost figure used in the cost analysis.

##### Analysis

A traditional approach to assessing cost-effectiveness was employed in the current study by combining, in the first instance, the scores on the ECBI intensity scale (i.e. the effect of the intervention) with information on the costs of health, social and educational service use and the costs of programme provision. Furthermore, in order to place these cost figures in a broader context and to estimate the potential long run returns, or future societal benefits of the IYP programme, we looked at other international studies that have attempted to relate improvements in conduct disorder in children, to outcomes that are

relatively straightforward to value. We then combined the results from these studies with our evaluation of the IYP programme in order to estimate the potential cost benefits or long-run returns of the programme in three key areas: crime; employment; and education. Reductions in crime, unemployment and the need for remedial education have all been identified as key benefits of reduced emotional and behavioural problems.

#### Key Findings: Short-term Outcomes

The most commonly used primary care services included GPs, Nurses and Speech Therapists. With respect to special resources during schooling, only one-to-one help (i.e. Special Needs Assistants (SNAs), emerged as an important service.

- There was a substantial decline, at follow-up, in the use of primary care and social work services in the intervention group when compared to the waiting list control group. At follow-up, only 1% of the intervention group had contact with a social worker during the previous six months.
- The estimated cost of the parenting programme was €1463 per child.
- The cost-effectiveness analysis showed that it would cost €2232 to bring the *average* child in the study to below the clinical cut-off point for serious behavioural problems (i.e. to achieve significant meaningful improvement). Further findings indicated that it would cost €7848 to bring the child with the highest intensity score to below the clinical cut-off for serious behavioural problems.
- When we combined the results of the cost-effectiveness analysis with estimates of the long-run potential gains to society (as valued using Irish data), we estimate the net present value of the IYP programme, (i.e. the return over and above the initial cost outlay and taking into account the fact that many of the gains may not be realised until some time in the future), to be approximately €4599 per child. This is a substantial return that compares favourably with alternative early childhood intervention programmes.
- Therefore, the overall results from the costs analysis reported here, suggests that the IYP programme offers a potentially very cost-effective service/policy option in terms of reducing long-term inequalities, when compared to other more intensive (and costly) alternatives.

### Conclusion and next steps

The findings summarised here, combine to demonstrate the overall effectiveness and cost-effectiveness of the *Incredible Years BASIC Preschool/Early School Years Parent Training* programme in Ireland, as an intervention for the early onset of conduct problems in young children (aged 3-7yrs). Additional benefits were also reported in terms of reduced parental distress and improved parental well being. Collectively, the findings replicate and build upon work conducted elsewhere in the world (e.g. Reid et al., 2004), although only a small number of previous studies on the IYP programme have been conducted outside the US (Taylor et al., 1998; Scott et al., 2001; Morch et al., 2004; Gardner et al., 2006; Hutchings et al., 2007). Our results, the first within an Irish context, show both improved child outcomes in the short term (e.g. significantly lower levels of conduct disorder and hyperactivity, increased social competence), as well as lower levels of distress and depression in parents. In particular, the findings of this study, in conjunction with the positive outcomes reported by researchers elsewhere, underline emphatically the success of the intervention in effecting a clinically significant improvement in both the frequency and intensity of behavioural problems in the 'intervention' children, as measured by the ECBI, the principal outcome measure in the study.

Participation in the parenting programme also successfully reduced critical and harsh disciplinary strategies and promoted parenting competencies, thereby encouraging positive child behaviour in the home. Good parenting skills have been shown to have a beneficial and enduring impact on child behaviour (Baumrind, 1993) and it is likely that the changes in parenting styles observed in our study, may have important positive implications for a range of child outcomes and adjustment later in life.

No significant differences were found between the intervention and waiting list control groups at follow-up, with respect to either peer problems or emotional symptoms, although both of these had shown some improvement. Children with conduct problems frequently experience peer rejection and social isolation from classmates (Coie, 1990) and the available evidence suggests that parent training may not be particularly beneficial in this respect. However, it is also possible that any changes in emotional symptoms, or peer relationships, may require a longer time frame than that covered by this study, although the former were not estimated to be particularly problematic, at baseline; hence there was less scope for downward change. Nonetheless, the longer-term findings from this study may throw further light on these issues.

The results of the qualitative sub-study, support and amplify the quantitative and observational assessments, whilst also providing useful insights into some of the perceived mechanisms of change underpinning the programme. The results highlight the largely positive experiences of participating parents and the reasons underlying programme drop-out. The findings illustrate, by and large, the considerable improvements in child behaviour derived from

participation in the parenting programme and the considerable social and emotional benefits for families. The positive views expressed by parents and the perceived benefits to both parent and child, were important sub-themes identified in the qualitative analysis. Parents attributed the benefits which they derived from the programme to be related, in large part, to the expertise, approachability and non-biased support of the group facilitators, the structure of the course and the skills which were imparted during the group sessions. However, some barriers to successful programme completion, such as a dislike of the format and some of the content, were also highlighted by a small number of parents who had dropped out of the programme.

Parents who successfully completed the course, also encountered several challenges throughout and upon completion of the programme. These included some initial difficulties with the concept of positive attention and the group process, as well as the implementation of limit-setting skills and the effort involved in trying to help the child to generalise the improved conduct to school environments. (The IY Teacher Classroom Management programme (TCM) and the child-centred DINA programme are designed to facilitate the transferral of these kinds of skills to the classroom and to further promote the child's pro-social and emotional behaviour outside the home environment.) Some parents also had to contend with the emerging misbehaviour of siblings as well as increased conflict with their partner in relation to the new IY disciplinary 'system'; some struggled further with emerging unresolved childhood issues and/or the lack of neighbourhood/community support.

The themes identified in the qualitative analysis are similar to those found by other studies; and highlight: (1) the benefits of being in a group with other parents (e.g. Barlow & Stewart-Brown, 2001; Patterson, Mockford & Stewart-Brown, 2005); (2) the welcome discovery of new parenting techniques (Webster-Stratton et al. 1996); (3) evidence of an increase in feelings of empathy, understanding and acceptance (Webster-Stratton et al. 1996; Barlow et al. 2001); (4) gaining competence and confidence in the parenting role (Webster-Stratton et al. 1996; Barlow et al. 2001); and (5) the importance of affirming and 'refuelling' oneself as a parent (Webster-Stratton et al. 1996). Overall, the results reported here, highlight the value of the IYP programme in improving parental skills and child emotional and behavioural development.

Some evidence suggests that parenting programmes can reduce the intensity of child problem behaviour at a relatively low cost (Edwards et al. 2007). However, it is important to note that, to date, there have been relatively few cost-effectiveness analyses of early intervention programmes of the type considered here. Recently, Aos et al (2004) in their series of cost-benefit analyses for a range of early intervention programmes, indicated that, while some programmes (e.g. early child education for low income families, Home Visitation Programmes for at risk mothers and children) achieved significantly greater benefits than costs, others (e.g. Early Head Start and the Infant Health

and Development Programme) were less successful in this respect, yielding net losses of between \$16,203 and \$49,000 per youth. The unsuccessful programmes were all characterised by extremely high costs (ranging from \$20,000 to \$49,000 per youth), reflecting in some cases, the much more intensive nature of the intervention. As noted above, the estimated costs of the IY parenting programme per child are much more modest.

The cost analysis highlights further the potential economic benefits of the intervention in terms of the lower levels of primary care service use in the intervention group. This decline in service use is consistent with the improvements in child behaviour and clearly enhances the overall cost-effectiveness of the programme. Furthermore, the cost of reducing the ECBI scores by means of the IY intervention compares favourably to recent work conducted in Wales; the total mean cost per child, of reducing problem behaviour, is modest, particularly in view of the potential benefits accrued to both child and parent.

The projected long-run rate of return to society, of the IYP programme (i.e. with regard to antisocial criminal behaviour, employment and education) is likely to be relatively high when compared to other popular and more intensive alternatives. In other words, the cost of providing the parenting programme may be more than offset by potential savings arising from the reduced use of health and social services as well as lower unemployment, and better educational and Criminal Justice System outcomes into the future. Other potential benefits, such as improvements in second and third level educational attainment and the associated increases in productivity and earnings capacity, reductions in substance abuse, and benefits accruing to the parents as a result of the programme, are likely to substantially increase these returns. This compares favourably with previous evaluations conducted in the US and elsewhere (e.g. Barnett 1992; Heckman et al. 1999). For example, many of the adult training programmes surveyed by Heckman et al. (1999) yielded negative returns.

In conclusion, the triangulation of findings presented here, provides convincing evidence of the appropriateness and cost-effectiveness of the *Incredible Years* BASIC *Preschool/Early School Years Parent Training* programme within an Irish context. The results indicate that the group based, manualised IY parenting intervention, can help to effect positive changes in child behaviour and augment and promote parent competencies (in a cost-effective way), thereby improving the lives of Irish children with EBD and their families. The benefits to both parents and children in terms of improved health and well being are substantial and these effects are not merely restricted to the family setting. The potential cost savings to the government in terms of reduced referrals and decreased use of services (health, welfare, educational etc) have important financial (and social) implications across time. The findings, albeit based on short-term outcomes, further reinforce the importance of parental intervention in early childhood and highlight the real and tangible benefits of implementing the IY

parenting programme throughout Ireland, in order to reach those families and children most in need of help and support. The next stage of this study will assess the extent to which the improvements reported here, are sustained post-intervention, at one-year follow-up. It is expected, on the basis of recent research (e.g. Bywater et al., 2009), that the benefits of the intervention will be maintained in the longer term. Further sub-analyses of the data will also be carried out to ascertain whether certain groups fared better than others. These findings will be reported at a later date.

## APPENDIX 1

### Description of measures used in the quantitative assessments

#### Child-related measures

##### Eyberg Child Behaviour Inventory (ECBI; Eyberg & Ross, 1978; Eyberg, 1980)

The ECBI (Eyberg & Ross, 1978; Eyberg, 1980) is a 36-item inventory designed to be completed by parents to assess problem behaviours in their child (aged 2-16 years). The ECBI demonstrates good reliability and validity and is ideally suited as: (a) a screening measure in the clinical identification of children for the diagnosis and treatment of externalising behaviour problems; (b) a selection measure for identifying 'high risk children for delinquency prevention programmes; and (c) as an outcome measure. It has been used extensively within parenting intervention studies (eg. Webster-Stratton, 1998) and is the primary outcome measure in this study. It was also used to identify eligible participants for inclusion in the parent trial. In addition, parents were asked to complete this measure for the sibling closest in age (where applicable) to the index child, as it was found by Hutchings et al. (2007) that there were significant improvements in both sibling and index behaviour.

##### Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997)

The SDQ (Goodman, 1997) is a 25-item, widely used and psychometrically sound behavioural screening measure for 3-16 year-olds (with available norms). A slightly modified 22-item version has been developed for use with 3- and 4-year olds. The SDQ has been used as an outcome measure in much previous research in this field (including previous evaluations of the IY programme).

##### Conners Abbreviated Parent/Teacher Rating Scale (CAPTRS)

The CAPTRS (Conners, 1994) is a brief and simple 10-item measure which was completed by parents to assess the incidence of hyperactivity in children (and index children) aged 3-7 (although it will be used here to assess children up to the age of 8). Hyperactivity can be particularly problematic in young children with emotional and behavioural disorders (Hartman, et al., 2003) and this measure was included to enhance the information derived from both the ECBI and the SDQ.

##### Social Competence Scale-Parent (SCS-P)

The final measure completed by parents was the SCS-Parent scale (designed for the US Fast Track project by the Conduct Problems Prevention Research Group) which is based on an adapted and extended version of work undertaken by Kendall and Wilcox (1979) and Gesten (1976). This brief, 12-item scale assesses the child's social functioning (positive social behaviours) and has been used in previous research by Webster-Stratton (1998). Current research evidence suggests that children with conduct problems may have difficulty in initiating and maintaining positive social relationships and/or in

correctly interpreting social cues (Asher and Coie, 1990; Webster-Stratton and Lindsay, 1999). The information derived from the SCS-P will be used to add to the SDQ 'Peer problems' and 'prosocial sub-scales' in order to enhance sample description.

#### Parent-related measures

##### Personal and Demographic Information Form (PDIF)

Demographic and background information on parents and children was collected at baseline using a semi-structured interview schedule, with a shorter version of the form used to obtain follow-up information. The *PDIF* was also used to elicit information on the child's health and development as well as the general health and relationships of the principal carer and family members. A measure of socio-economic disadvantage (a risk factor for the development of child behavioural difficulties) can also be elicited from questions on, for example, employment, marital status, maternal education and living circumstances (Hutchings, 1996). The PDIF is important in providing data for purposes of attrition analysis and for testing the equivalency of the waiting list control and intervention groups.

##### Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)

Parents completed the 21-item BDI (Beck et al., 1961) in order to assess the overall prevalence and severity of depressive symptoms and behaviours (during the previous two weeks). It is important to assess depression as it may impact upon both outcomes and completion rates. For example, much research indicates that maternal depression has frequently been found to co-occur with child conduct problems (Murray & Cooper, 1997) whilst some evidence also suggests that it may improve as a result of parenting programmes (eg. Hutchings et al., 2002). Therefore, depression should be assessed and monitored over time (as in previous work by Webster-Stratton, 1998), both as part of the attrition analysis and in order to assess the equivalency of the intervention and waiting list control groups. In this case, the BDI provided a brief, easy-to-complete measure with well demonstrated psychometric properties (eg. Beck et al. 1988; Groth-Marnat, 1990). Furthermore, unlike other measures, it is not sensitive to fluctuations in mood; it has also been used widely in research involving mothers of young children (e.g. Hutchings et al., 2002).

##### The Parenting Stress Index – Short Form (PSI-SF)

The 36-item PSI-SF (Abidin, 1992) was administered to all parents to assess overall levels of parental competence. Specifically, the PSI-SF provides an acceptably reliable and valid measure of the nature and extent of stress experienced by parents in their parenting role. It comprises four sub-scales (Parental Distress, Parent-Child Dysfunctional Interaction, Difficult Child and Defensive Responding) and is suitable for parents/guardians of children up to the age of 12



years. The PSI has been used in previous outcome studies (Webster-Stratton and Hammond, 1997; Hutchings, 2002) and, in the context of the proposed research, provides an ideal means of assessing the extent to which parental stress affects the successful and effective completion of parental training.

### The O’Leary-Porter Overt Hostility Scale (OPOHS) (modified by Johnson & O’Leary, 1987)

The brief 10-item OPOHS was administered to parents in two-parent families to provide a measure of the frequency with which parents openly argues in the presence of their children. It is desirable to record changes in such negative behaviours due to the fact that appropriate anger management is one of the proposed positive outcomes of the IY programme. This would supplement the information obtained from the PSI-SF and would provide another indicator of the effectiveness of the IY parenting programme.

### Independent Observation

#### Dyadic Parent-Child Interactive Coding System-Revised (DPICS-R)

The DPICS-R is a widely researched observational measure designed to help assess parenting styles and the overall quality of the parent-child interaction during an approximate 30-minute interaction; it encompasses a total of 24 parent and child behaviour categories (eg. child deviance). The coding is continuous and is based on the frequency of each behaviour per specified interval. The DPICS-R also assesses the effects of the parenting programme as it focuses on key parent and child behaviours that are targeted in the parenting programme (eg commands, praise, critical statements and physically coercive behaviours).

### Additional information on services

#### Service Utilisation Questionnaire (SUQ)

The SUQ yields information on use of primary care service use both by the main carer and child, in addition to use of educational and social services. The SUQ is adapted from the Client Service Receipt Inventory (Chisholm et al., 2000) used in previous IY evaluations and was administered to all parents to assess the frequency and costs of health, social and educational services used by the index child and the parent during the previous six months. The information elicited from the questionnaire is used for the cost analysis sub-study to provide a costing on service use by all parents and children at baseline and post-intervention.

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