

## Development and Aging

# Evaluation of “The Incredible Years” in Sweden: The transferability of an American parent-training program to Sweden

ULF AXBERG and ANDERS G. BROBERG

*University of Gothenburg, Sweden*

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Structured parent training has been proven to be effective in reducing disruptive behavior problems (DBP) in children. Most of the programs that are used in Sweden have their origin in North America, and there is an ongoing debate over the transferability to Sweden of manual-based programs developed in other contexts. The goal of the present study was to study effectiveness of the Incredible Years parent-training program (IY), developed in the US, in regular clinical work in Sweden, using a randomized controlled design. Parents of 62 four to eight-year-old children diagnosed with Oppositional Defiant Disorder participated in the study. Parents of 38 children were assigned to parent training (PT) and 24 to a waiting list (WL). The results indicate that the IYS retains the positive effects on children’s disruptive behavior problems when translated and transferred to Swedish. There was a statistically significant difference in reduction of DBP in children between the groups in favor of the PT. The improvement in the PT group was sustained at the one-year follow-up. The improvement also, at least to some extent, generalized over time to the school context. There was also a statistically significant difference in mothers’ report of pre to post change in parenting alliance between the PT and WL groups. The IYS program was appreciated and well received by the participating mothers.

*Key words:* Oppositional Defiant Disorder (ODD), disruptive behavior problems, parent training, Incredible Years, transferability, effectiveness.

*Ulf Axberg, University of Gothenburg, Department of Psychology, Box 500, 405 30 Göteborg, Sweden. Tel: +46(0)31-786 16 39; e-mail: ulf.axberg@psy.gu.se*

### INTRODUCTION

Disruptive behaviors are common during children’s first years of life, but they decline as children grow older, and are gradually replaced by more socially acceptable manners to express will and emotions such as frustration or anger (Tremblay, 2010). If disruptive behaviors, such as aggression, severe non-compliance and/or defiance, persist at a high level there is, however, a clear risk that the problems worsen (into, e.g., truancy, stealing, or vandalism) and persist into adolescence and adulthood (Moffitt, 2003). Children with disruptive behavior problems (DBPs) constitute a large group among those cared for by child and adolescent social and psychiatric services (Kopp & Gillberg, 2003; Lundahl, Risser & Lovejoy, 2006). Serious anti-social behaviours, such as truancy, stealing, robbery and drug abuse, are very costly for society (Scott, Sylva, Doolan *et al.*, 2010). Therefore, also from a societal point of view, it is important to identify DBPs and introduce interventions already during the preschool years, aiming to prevent pathways leading from oppositional defiant disorder (ODD) to severe conduct problems in middle childhood and adolescence (Tremblay, 2006).

In the diagnostic systems of the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV) (American Psychiatric Association, 1994), and the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (World Health Organization, 1992), disruptive behavior disorders (DBDs) are coded as conduct disorder (CD), ODD, and disruptive behavior disorder not otherwise specified (DBD-NOS). Oppositional defiant disorder includes criteria that are close to normal disruptive behavior, such as losing one’s temper and arguing, and therefore has commonly been considered a less severe form of DBP and more of a precursor of CD (Nock,

Kazdin, Hiripi & Kessler, 2007). However, even if disruptive behaviors are common in early childhood it is important to distinguish between normative behaviors and behaviors that are of clinical concern. Frequency and modulation of behaviors, as well as reactivity – pro-activity, contextual persistence, age-appropriate concern for others – and developmental pathways are some of the important dimensions of this distinction (Wakschlag, Tolan & Leventhal, 2010). Hence, there is evidence that ODD in fact is as a distinguishable disorder (Nock *et al.*, 2007). The prevalence of ODD is, however, unclear, ranging in various studies from 2% to 15% (Nock *et al.*, 2007). The co-morbidity between ODD and attention deficit hyperactivity disorder (ADHD) is high, with reported figures of 30% to 90% in different studies (Rydell, 2010).

The development of DBP is a complex process that is best understood using a transactional model, in which genetic (including epigenetic effects), psychological and social factors interact over time (Sameroff, 2006; Tremblay, 2010). Early onset (i.e. before 8 years) and co-morbidity with other disorders (e.g. mood, anxiety and deficient impulse control disorders) increase the risk of long-lasting ODD, as do anti-social and drug-related problems (Nock *et al.*, 2007). Not only the child him/herself, but also the family, peers and others who come in contact with the child are affected by the disruptive problems.

Various interventions that address parenting practices known to cause or worsen children’s DBPs have been presented (Kaminsky, Valle, Filence & Boyle, 2008). Among these are promoting positive parenting (spending time together, comforting, smiling, praising, etc.) and promoting the child’s social competence, especially when interacting with peers. Other targeted areas are the parents’ ways of exercising control either psychologically (e.g. through love withdrawal, induction of guilt, invalidation of feelings,

restriction of verbal expression, etc.) or behaviorally (through limit setting, age-appropriate demands, monitoring, etc.) (Barber, Stolz & Olsen, 2005). Furthermore, a consistent pattern of associations between externalizing behavior and perceived parental control has been demonstrated by Hagekull and colleagues (2001) and thus is a target for interventions. Research has also shown that maternal psychosocial health may have a significant effect on the mother-child relationship, with impact on the short as well as long-term psychological health of the child (Barlow, Coren & Stewart-Brown, 2003). Consequently, the association between mothers' psychological health and outcome, for their children as well as for themselves, has become an essential aspect of studies of parent training (PT) programs (Barlow *et al.*, 2003). Furthermore, high levels of interparental conflict have been linked to internalizing as well as externalizing problems in children (Fosco & Grych, 2008; Sturge-Apple, Davies, Winter, Cummings & Schermerhorn, 2008).

A special facet of the link between interparental conflict and child behavior is how the parents of a child communicate about their child-rearing practices and to what extent they respect and support each other. Together with the parents' investment in the daily life of their children, and each parent's approval of the other parent's involvement, this makes up the concept of parenting alliance (Konold & Abidin, 2001). Mothers' experience of parenting alliance has been shown to contribute in a unique way to the child's behavioral problems, that is, less perceived parenting alliance was associated with higher levels of behavior problems (Bearss & Eyberg, 1998).

Structured PT programs are effective and cost-effective in treating young children's DBPs (Furlong, McGilloway, Bywater, Hutchings, Smith & Donnelly, 2012; Kaminsky *et al.*, 2008; Scott, 2009). Aspects that have been proven to result in better effects following PT programs are teaching the parents emotional communication skills, and training them to interact positively with their children and be consistent in discipline (Kaminsky *et al.*, 2008). One such PT program is The Incredible Years (IY), which was developed by Carolyn Webster-Stratton. It has been awarded the status of "exemplary program" by the US government (Webster-Stratton, 2000) and has, in several well-controlled, randomized studies, been shown to have a good effect. In addition to studies conducted in the USA, a number of independent replication and evaluation studies have been conducted with similar results in England, Canada and Norway (Gardner, Burton & Klimes, 2006; Larsson, Fossum, Clifford, Drugli, Handegård and Mørch, 2009; Taylor, Schmidt, Pepler & Hodgins, 1998; Webster-Stratton, Reid & Stoolmiller, 2008). The overarching aim of the IY program is to reduce DBPs in children by promoting a more positive interplay between the child and his or her caregivers. This is achieved through interventions that foster a more secure child-parent relationship, reduce harsh and inconsistent parenting and poor monitoring, decrease the child's association with deviant peers, and promote the child's positive bonding to school. The parents of six to eight children meet weekly for 12-14 weeks. During the 2-hour sessions several video vignettes on specific themes are shown and discussed. Principles for how the child can best be handled, based on the specific theme, are outlined. In role-play sessions the parents practice how they can meet their child in accordance with these principles, and in addition the parents get a

weekly assignment to practice their newly acquired skills at home until the next session.

In Swedish media as well as in professional journals there is an ongoing debate about the implementation and transferability of PT programs developed in the USA to a Swedish context (see, e.g., Bremberg, 2004; Gustafsson, 2010; Hylander, 2004; Svensson, 2008; Zeligman, 2008). The need to examine the transferability of programmes, which were developed for a different context, has been underscored (Sundell, Hansson, Löfholm, Olsson, Gustle & Kadesjö, 2008; Thorell, 2009). Furthermore, it is important to examine, in regular clinical settings, the effectiveness of programs that have been developed in university-based settings, since it has been demonstrated that treatment effects typically diminish when interventions are tested outside of research-based environments (Scott *et al.*, 2010). In Sweden, the IY Series when first introduced was evaluated in an uncontrolled open study, with promising results (Axberg, Hansson & Broberg, 2007). The present study is, however, the first to evaluate the effectiveness of the IY programme in Sweden using a randomized controlled trial (RCT) design.

The study was approved by Göteborg University, The Sahlgrenska Academy, Ethics committee (D:nr Ö 669-03).

### Aims

The overarching purpose of the present study was to evaluate the transferability of the IY BASIC PT program from a US to a Swedish clinical context. The primary aim was to evaluate, by comparing a PT group with a waiting-list (WL) group, the effects of the program on children's DBPs in a group of children diagnosed with ODD. Besides testing for statistically significant differences between the PT and WL groups, a further aim was, in a client-centred approach, to determine how many children displayed a statistically reliable change (evaluated using the reliable change index, RCI), and in what direction. A second aim was to study the sustainability of treatment effects over 1 year. Taken the co-morbidity with mood and anxiety disorders into account, a third aim was to explore and evaluate possible effects on internalized psychiatric symptoms. In addition, a fourth aim was to evaluate possible generalization effects on children's disruptive behaviors from the home to the school context. The fifth aim was to study the effects on the participating mothers' psychological symptoms, perceived parental control (PPC) and experience of parental support. Finally, in light of the debate in Sweden on the appropriateness of PT models in a Swedish context, the sixth aim was to explore to what extent the participating mothers were satisfied with the intervention.

### METHODS

Seven group leaders who were all trained by a certified IY BASIC trainer took part in the study. To secure model integrity, the group leaders accepted to follow the IY BASIC manual and participate in regular group supervision led by a certified IY trainer. The sessions were videotaped and reviewed in supervision. A multi-informant, multi-method design was used for the study. The participants were recruited through the group leaders' regular child and adolescent psychiatric services. When parents of 4-8-year-old children displaying DBPs called the psychiatric services, the Eyberg Child Behavior Inventory (ECBI) (for details, see Measures

section below) was used in a telephone interview. If the child scored at least 1.5 standard deviation (SD) above the Swedish normative mean on the ECBI intensity scale (ECBI IS) the parents were asked to participate in the current study. Participation was voluntary and not a prerequisite for help. Mothers who were willing to participate were interviewed by specially trained clinicians, who were not part of the intervention team, using a Swedish translation of the semi-structured diagnostic interview Kiddie-Schedule for Affective Disorders and Schizophrenia for School-Aged Children (K-SADS) (see Measures section). If the child met the criteria for ODD they were included in the study, and written consent was obtained from the parents.

The present study is an effectiveness study conducted in the setting of the ordinary child and adolescent psychiatric services. A goal of these services is to keep the waiting list as short as possible, and preferably to have no waiting list at all. To enable a randomization this process had to be adjusted to the ordinary waiting list of the services. In addition, all parents who had been put on the waiting list were offered PT after being on the waiting list, since there exists evidence of the efficacy of PT in international studies. The parents of ten children said they would want to participate in PT after their turn on the waiting list, and were included as part of the WL group (and not the PT group) in further analyses. Based on calculations of estimated effect sizes and the predicted waiting lists of the present services, 38 of the parents were randomized to the PT group and 24 to WL controls after the interview. Data were collected before and after parents were placed on the waiting list, and before the start and immediately after completion of the program. A follow-up was done 1 year after program completion, to measure whether the recorded changes had been sustained. At the follow-up, a new K-SADS interview was conducted by an independent interviewer (most often the same interviewer as at the pre-test). Parents were also asked to give their consent to collect ratings from the children's teachers.

### Participants

Inclusion criteria were (a) that the children met the criteria for ODD, according to the DSM-IV, text revision (DSM-IV-TR) (American Psychiatric Association, 2000), and were 4–8 years old, and (b) that the parents had sufficient understanding of the Swedish language to complete the forms and, furthermore, that they gave their consent to participate in the study. Parents of four children declined to participate after the initial telephone interview. Altogether, the mothers of 62 children (52 boys and ten girls) were included in the study. Of the children in the sample, 63% lived with their biological mother and father (or adoptive parents), compared with 77% of children in Sweden as a whole (Population and Education Statistics, Special Analysis, Statistics Sweden, 2004). Both of the parents of 93% of the children had been born in Sweden, compared with 74% in the general population of Sweden (Statistics Sweden, 2004). The educational level of mothers in the sample was in line with the level of education of mothers in the general population.<sup>1</sup> Most of the mothers, 80%, were employed, compared with 81% in Sweden as a whole.

The parents of 38 children (31 boys, seven girls) were randomized to the PT program and 24 (21 boys, three girls) to the WL group. The parents of one child who were randomized to the PT group dropped out between the initial ECBI assessment and the start of PT (see Fig. 1). There were no statistically significant differences in the pre-test ratings or in demographic data such as ethnicity, level of education and employment or children living with both parents between the PT and the WL groups. The parents of 47 children (30 in the PT and 17 from the WL group) gave their consent to obtain teacher ratings. There were no statistically significant differences with regard to consent given between the PT and WL group or the children's sex or any of the pre ratings.

### Measures

To assess the children's psychiatric problems and symptoms and any changes in the children's behavior, the following measures were used.

The Kiddie-SADS-Present and Lifetime Version (K-SADS-PL) (Kaufman, Birmaher, Brent & Rao, 1997) is a semi-structured interview

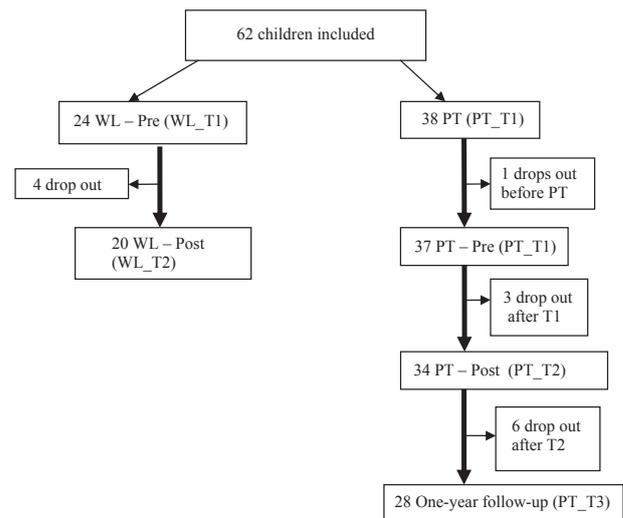


Fig. 1. Flowchart of inclusion and drop out.

developed to measure psychopathology in children, according to DSM-IV criteria. Besides screening of primary symptoms of different diagnoses, the K-SADS-PL provides specific probes and scoring criteria to assess each symptom. Thus a specific symptom score can be calculated. In our introductory interview (during which the K-SADS was administered), the interviewer asked the mothers to also identify and rate three of their child's most problematic behaviors (e.g. has temper tantrums, cannot play with peers, is oppositional and demanding, does not listen to parents) on a scale of 1–10. At the follow-up the interviewer recalled the specific problematic behaviors and asked the mother to rate them again.

The ECBI is a parent rating scale widely used both clinically and in research to measure DBPs in 2–16-year-old children (Burns & Patterson, 2000; Eyberg & Pincus, 1999). It contains two scales, the intensity scale (IS), which is the summed frequency of 36 symptoms of DBPs, and the problem scale (PS), which reflects whether the parent perceives the specific behavior as "a problem". The IS is a seven-point Likert scale ranging from 1 = "never happens" to 7 = "always happens" (total score range 36–252), while the PS is a scale (range 0–36) based on dichotomous ratings on each item (1 = "yes", it is a problem, or 0 = "no", it is not a problem). The ECBI has been translated into Swedish and normative Swedish data have been published elsewhere (Axberg, Johansson Hanse & Broberg, 2008). In the current study, the internal consistency as measured by Cronbach's alpha was 0.81 (IS) and 0.75 (PS) (pre-ratings).

The Sutter-Eyberg Student Behavior Inventory – Revised (SESBI-R) is the equivalent to the ECBI but different from the ECBI since it is a teacher rating form modified to be used in preschool and the school setting (Eyberg & Pincus, 1999). Cronbach's alpha on the SESBI-R IS was 0.97 in the current study; on the PS it was 0.96.

The Strengths and Difficulties Questionnaire (SDQ) is widely used by both clinicians and researchers to assess pro-social behavior and psychological problems in 3–16-year-olds (Goodman, 1999; Malmberg, Rydell & Smedje, 2003; Obel, Heiervang, Rodriguez *et al.*, 2004). The SDQ for parents (SDQ-P) is a parent rating scale consisting of 25 items. The respondents check the boxes for "not true", "somewhat true" or "certainly true". Besides a pro-social score, four syndrome scales can be calculated: emotional, conduct, hyperactivity-inattention, and peer problems. Summed together, the syndrome scores constitute the total difficulties score. The SDQ has been translated and tested in Sweden, with good results (Smedje, Broman, Hetta & Von Knorring, 1999). Its emotional problems subscale (SDQ-Emo) was used in the present study to assess internalized psychiatric symptoms (i.e. anxiety and depression). Cronbach's alpha calculated on pre-ratings was 0.75 in the current study.

The instruments used to assess the participating mothers' own psychological symptoms, PPC and experience of parental support were: the Symptom Check List (SCL), the Parental Locus of Control (PLOC) and the Parenting Alliance Measure (PAM). The SCL is a self-report

instrument that consists of 90 items of psychological and emotional symptoms in adults (Derogatis, Lipman & Covi, 1973). A low score indicates a lack of psychiatric symptoms. The SCL-90 has been translated into Swedish and normative data have been published in Fridell, Cesarec, Johansson & Mallings Andersen (2002). Cronbach's alpha on SCL items in this study was 0.96 (pre-ratings).

The PLOC is a multidimensional instrument created to assess parental locus of control (Campis, Lyman & Prentice-Dunn, 1986). It has been reported to have sound psychometric properties (reliability and validity) in studies from the developers as well as from other researchers (Barakat, Lutz, Nicolaou & Lash, 2005; Campis *et al.*, 1986; Roberts, Joe & Rowe-Hallbert, 1992). In a Swedish study, the Parental Control of Child's Behavior subscale was demonstrated to be a psychometrically adequate measure of PPC. Cronbach's alpha across mothers' and fathers' ratings of children aged 3 and 9 was 0.72–0.81 (Hagekull, Bohlin & Hammarberg, 2001). The scale consists of ten statements (e.g. "I always feel in control when it comes to my child") and the parents rate each on a five-point rating scale (from 1 = "does not at all apply" to 5 = "does very well apply"). The PLOC-PPC subscale was used in the current study and Cronbach's alpha was 0.66 (pre-ratings).

The PAM is a 20-item self-report measure designed to assess the perceived alliance between the parents of children aged 1–19 years (Abidin & Konold, 1999). The measure consists of 20 statements regarding the parents' ability to cooperate in meeting their child's needs (e.g. "My child's other parent and I communicate well about our child"), with answers ranging from 1 = "strongly disagree" to 5 = "agree". The PAM has been shown to have adequate reliability (alpha 0.97, test-retest reliability 0.80) and construct, criterion as well as discriminant validity (Abidin & Konold, 1999). Cronbach's alpha in the current study was 0.97 (pre-ratings).

In addition to the above instruments, the IY Parent Program Satisfaction Questionnaire BASIC Parent Program (Webster-Stratton, 2001) was used to measure how the PT program was received by the participating parents. Mothers rated how useful and difficult they perceived the teaching format and specific parenting techniques to be, as well as their overall experience of the program, on a seven-point Likert scale.

#### Data analysis

Data analysis was conducted in two steps: first, an analysis of covariance (ANCOVA) was performed, with group assignment (PT or WL) as independent variable, post-scores as dependent variable, and pre-scores as covariate. Secondly, *t*-tests were used to evaluate sustainability of treatment effects in the PT group between post- and follow-up assessments. The children's age and gender were controlled for.

Furthermore, the RCI, a measure proposed by Jacobson and Truax (1991) to establish whether a change for any given subject is statistically reliable, was used to test for statistically significant differences in outcome on the ECBI IS within and between the PT and WL groups. The RCI is calculated by dividing the pre–post difference for each subject by the standard error (SE) of the difference score. Thus, the individual change should be larger than what could be attributed to chance or measurement error (Jacobson, Roberts, Berns & McGlinchey, 1999). Each subject can then be classified as "deteriorated" (i.e. changed statistically significantly in a negative direction from a non-clinical to a clinical level), "worsened" (i.e. changed statistically significantly for the worse but on the same clinical or non-clinical level), "improved" (changed statistically significantly in a positive direction but within the same clinical or non-clinical level) or "improved and recovered" (changed statistically significantly from a clinical to a non-clinical level). The clinical cut-off was set to the 90th percentile in the Swedish normative sample. The RCI has only been calculated on the ECBI IS, which corresponds with the primary aim of the study (effects on children's DBP). The Swedish normative mean score and the mean for the total study group (PT and WL groups combined) was used in this calculation. The significance level of the individual change was set to 0.05. To avoid overestimation of the improvement rates an Intent-to-treat (ITT) design has been used where children of families that dropped out was counted as unchanged.

To calculate effect size between the PT and WL group a method proposed by Morris (2008) was used in which effect size is calculated on the mean pre–post change in the treatment group minus the mean pre–post change in the control group, divided by the pooled pretest standard deviation. Non-parametric statistical methods (e.g. Fisher's exact test and, for related sample comparisons, the McNemar test) were used to calculate categorical data.

#### Attrition analysis

There was no statistically significant difference between pre–post completers and non-completers in any of the pre-ratings on the various measures (ECBI IS:  $t = 0.78$ , n.s.; PS:  $t = 1.70$ , n.s.; SESBI-R IS:  $t = -1.24$ , n.s.; PS:  $t = -0.35$ ; SDQ-Emo:  $t = -0.27$ , n.s.; SCL-90:  $t = 0.44$ , n.s.; PAM: 1.38, n.s.; PLOC:  $t = -0.61$ , n.s.) or on co-morbidity of ADHD problems assessed by the K-SADS before the intervention (Fisher's exact test = 0.39). Nor were there any differences on pre-ratings between completers and non-completers of the pre-intervention to follow-up of the PT group (ECBI IS:  $t = 0.99$ , n.s.; PS:  $t = 0.20$ , n.s.; SESBI-R IS:  $t = -0.50$ , n.s.; PS:  $t = -0.04$ ; SDQ-Emo:  $t = -1.95$ , n.s.; SCL-90:  $t = 1.11$ , n.s.; PAM:  $-0.78$ , n.s.; PLOC:  $t = -0.77$ , n.s.) or on co-morbid ADHD (Fisher's exact test,  $p = 0.42$ ).

## RESULTS

#### Descriptive of parent training and waiting list groups

Mothers' and teachers' pre-test ratings are displayed in Table 1. The mothers' pre-test ratings of the children included in the present study on the ECBI IS and PS was statistically significant over the 95th percentile of the Swedish normative data, indicating DBPs on a clinical level. However, when it comes to emotional problems the clinical cut-off score on the Emo subscale in a Swedish sample was 5 (Smedje *et al.*, 1999), thus both the PT and WL group medium scores fell below the clinical cut-off.

The mothers' pre-ratings of their psychological symptoms (SCL-90) were higher than the Swedish normative mean ( $M = 0.49$ ,  $N = 707$ ,  $SD = 0.44$ ) in the PT group ( $t = 3.609$ ,  $p < 0.01$ ) as well as the WL group ( $t = 2.48$ ,  $p < 0.05$ ).

#### Effects and sustainability on children's disruptive behavior problems

Mothers' pre and post-test ratings are displayed in Table 2. An ANCOVA with pre-test ratings as covariates was conducted to test if there was any statistically significant difference in outcome between the PT and WL groups when children's age and sex were controlled for. There was a statistically significant difference in outcome in favor of PT on the ECBI IS ( $F = 13.284$ ,  $p = 0.001$ ) as well as on the ECBI PS ( $F = 9.942$ ,  $p = 0.003$ ). The effect size of the difference in outcome between the groups was large on the ECBI IS ( $d = 1.17$ ) as well as the ESCBI PS ( $d = 1.26$ ). To explore the sustainability of the treatment effect a comparison was conducted between post- and follow-up ratings of the PT group. There was no statistically significant difference between post- and follow-up scores on the ECBI IS ( $t = -0.72$ , n.s.) or ECBI PS ( $t = -0.57$ , n.s.).

In addition to performing an ANCOVA of pre–post changes, and *t*-tests of post-intervention to follow-up, the individual statistically reliably change was calculated on the ECBI IS. An ITT

Table 1. Descriptives: mothers' and teachers' pre-ratings

Measure	Pre-ratings PT			Pre-ratings WL			Sig
	N	M	(SD)	N	M	(SD)	
ECBI IS	37	159.2	20.11	24	152.0	23.38	n.s
ECBI PS	27	21.5	4.40	22	20.86	6.27	n.s
SESBI IS	30	131.8	49.35	17	139.1	51.19	n.s
SESBI PS	30	12.3	11.36	16	15.4	11.34	n.s
SDQ Emo	37	3.22	2.75	24	3.04	2.56	n.s
SDQ – T Emo	30	1.87	2.19	17	2.29	2.59	n.s
SCL – GSI	37	0.76	0.51	24	0.72	0.62	n.s
PLOC – PPC	37	27.08	5.06	24	28.22	5.99	n.s
PAM	37	66.49	17.51	23	63.52	22.28	n.s

Table 2. Children's symptoms, completer scores, ANCOVA,<sup>a</sup> Morris effect size<sup>b</sup>

Measure	Parent training group					Waiting-list group					P	<i>d</i> <sub>ppc</sub>
	Pre-rating		Post-rating			Pre-rating		Post-rating				
	N	M	SD	M	SD	N	M	SD	M	SD		
ECBI IS	32	160.0	20.3	128.6	26.5	20	152.9	23.6	147.1	26.0	0.001	1.17
ECBI PS	24	20.83	4.17	11.13	7.85	17	20.41	6.58	17.53	8.01	0.003	1.26
SESBI IS	29	131.7	50.2	127.7	56.4	15	139.7	50.7	145.1	49.2	0.387	0.18
SESBI PS	28	12.64	11.5	12.7	11.9	15	14.80	11.4	18.07	11.6	0.066	0.27
SDQ EMO	34	3.15	2.73	2.79	2.77	20	3.35	2.25	3.10	2.49	0.993	0.004
SDQ – T EMO	29	1.93	2.20	1.79	1.95	14	2.71	2.67	2.21	2.01	0.998	-0.15

<sup>a</sup> Post-scores dependent variable, pre-scores covariate, age and sex controlled for.

<sup>b</sup> M pre-post-test change in PT and WL group, divided with pooled pre-test SD (Morris, 2008).

design was used. In the PT group 71% displayed a statistically significant positive (improved = 37%, and recovered = 34%) pre- to post-intervention change, while 21% remained unchanged and 8% had worsened. No children had deteriorated according to the mothers' ratings. In the WL group 33% displayed a statistically significant positive change (improved = 25% and recovered 8%), 58% remained unchanged and 2% had worsened. No children had deteriorated in the WL group. The difference between the PT and WL groups regarding how many children had a positive change compared with no or negative change was significant ( $\chi^2 = 8.513$ ,  $p = 0.004$ ). When the pre- to follow-up ratings for the total PT group were compared, 55% displayed a positive change (improved = 29% and recovered 26%). In the completer sample ( $N = 28$ ) 75% displayed a positive change (39% improved and 36% recovered) when comparing pre- to follow-up ratings.

Having an ODD diagnosis was an inclusion criterion, thus all children met the DSM-IV criteria of ODD at the pre-intervention interview (K-SADS). At the follow-up, one year after the PT intervention, 23% of the children met the criteria for ODD, a difference that was statistically significant (McNemar test for comparison of related samples = 19.048,  $p < 0.001$ ). No one-year follow-up was conducted with the WL group; therefore it was not possible to obtain differences for that group. There was also a statistically significant decrease in K-SADS behavior disorder scores for the PT group from pre-intervention to the one-year follow-up ( $t = 5.94$ ,  $p < 0.001$ ), and the effect size was large ( $d = 1.69$ ).

Furthermore, there was a statistically significant change, from the pre-intervention to the follow-up, in the ratings of the two most problematic behaviors named by the mothers ( $t = 8.03$ ,  $p < 0.001$ ,  $d = 2.32$ ).

#### Effects on children's internalized psychiatric symptoms

The effects on children's internalized psychiatric symptoms were examined using the SDQ-Emo subscale (Table 1). There was no statistically significant difference in the pre-post ratings for either the PT or the WL group. There was, however, a marginally significant decrease in emotional symptom scores for the PT group although the ANCOVA revealed no significant difference between the PT and WL groups ( $F = 0.007$ , n.s.).

#### Generalization from the home to the school context

There was no statistically significant difference on the teacher pre- to post-ratings on the SESBI-R IS and PS for the PT or WL groups. Nor was there any significant difference in outcome between the PT and WL group on the SESBI-R IS (ANCOVA:  $F = 0.765$ , n.s.). However, there was a marginally significant difference between the groups on the PS ( $F = 3.591$ ,  $p = 0.07$ ,  $d = 0.55$ ) in favor of PT. Furthermore, there was a marginally significant difference between the teachers' post-intervention and follow-up ratings for the PT group's SESBI-R (IS:  $t = 2.06$ ,  $p = 0.05$ ,  $d = 0.31$ ; PS:  $t = 2.06$ ,  $p = 0.05$ ,  $d = 0.43$ ), indicating a

decrease in DBPs in the school setting. There was no one-year follow-up for the WL group. The inter-rater agreement on pre-ratings of children's DBPs between the parents and the teachers on the ECBI and SESBI-R was very low (intra-class correlation (ICC) based on pre-ratings: IS = 0.08, PS = 0.20).

#### Mothers' psychological symptoms, perceived parental control and experience of parental support

The mothers' ratings of psychological symptoms (SCL-90), perceived parental control (PLOC-PPC) and experience of parenting alliance (PAM) are displayed in Table 3.

There was no statistically significant difference in pre to post ratings in mothers' self-rated psychological symptoms (SCL\_GSI) between the PT and WL group (ANCOVA  $F = 0.072$ ,  $p = n.s.$ ) There was, however, a statistically significant from pre to post intervention in the PT group ( $t = 2.622$ ,  $p = 0.01$ ), which was sustained over time.

Mothers in both groups reported more parental control (PLOC-PPC) post- as compared to pre- intervention. The effect size was high in the PT group ( $d = 1.27$ ) and medium in the WL group ( $d = 0.66$ ). The difference in change between the PT- and WL-groups was not statistically significant (ANCOVA  $F = 2.073$ ,  $p = n.s.$ ,  $d = 0.56$ ).

Mothers in the PT group reported a more positive development in perceived parental alliance from pre- to post-intervention compared to WL-mothers (ANCOVA  $F = 4.723$ ,  $p = 0.035$ ,  $d = 0.65$ ). The effect in the PT group was sustained to the one-year follow up.

#### User satisfaction

The mothers did not find the techniques taught in the IY program so easy to use. A little less than half of them (44%) found them "easy" (38%) or "very easy" (6%) to use. Almost a third (29%) found the techniques "somewhat easy", and a minority found them "slightly difficult" (12%) or "difficult" (3%) to use. Despite this, the "overall feeling" about the program was "positive" (21%) or "very positive" (79%). A large majority of the mothers felt that the approach used to change their child's behavior problems was either "very appropriate" (68%) or "appropriate" (26%), and all of the mothers declared that they would either "recommend" (6%) or "strongly recommend" (94%) the program.

## DISCUSSION

The overarching purpose of the present study was to evaluate the transferability of the IY BASIC program from a US to a Swedish clinical context. The main aim of the study was to evaluate the effect of the IY BASIC PT program on children's DBPs. The results indicate that IY BASIC PT can be an effective method of treating children's DBPs in regular clinical work in Sweden, which is well in line with results from other countries. The effects of the program on the behaviors that are especially targeted, for example various oppositional behaviors and conduct problems, were large. The effects were observed directly after parents' participation in the program and they also seemed to be sustained for at least 1 year.

It is also noteworthy that the problems that the mothers rated as most troublesome were reduced to a very large extent over a one-year period. This may be a result of the fact that at the onset of the program the parents were asked to formulate their own specific goals for participating, based on which of their child's behaviors they considered most problematic, and therefore wanted to handle better. Consequently, it seems that the program works well also in Sweden, in accordance with the primary goals of the program, which are to reduce oppositional and conduct problems in children. At least in the short run, though, this change does not generalize to internalizing problems. There was a marginally significant change in the PT group from pre- to post-intervention but there was no difference compared with the WL group. It should, however, be noted that the pre-ratings of children's internalizing problems (SDQ EMO) were well below the clinical cut-off, and thus small effects were to be expected.

To avoid an overestimation of recovery rates an ITT design was used when an individual focused approach (RCI) was calculated. Even so, more than 71% of the children in the PT group displayed a statistically significant improvement from pre- to post-ratings on the ECBI. These results are encouraging since the present study is an effectiveness study of regular outpatient settings. In a meta-analytic study of youth in outpatient community mental services ( $n = 363$ , ages 4–17), Warren, Nelson, and Burlingame (2009) found that less than 50% of the children and youths had a statistically significant improvement after treatment and 21% had a statistically significant impairment. It is also encouraging to note that at the one-year follow up about 71% of the children in the completer sample and 55% of the children in the ITT sample in our study still had a statistically significant improvement compared to pre ratings.

Table 3. Mothers' psychiatric symptoms, perceived parental control, parental alliance, ANCOVA<sup>a,b</sup>

Measure	Parent training group					Waiting-list group					P	$d_{ppc}$
	Pre-rating			Post-rating		Pre-rating			Post-rating			
	N	M	SD	M	SD	N	M	SD	M	SD		
SCL – INDEX	34	0.77	0.52	0.57	0.53	20	0.70	0.62	0.55	0.50	0.790	0.09
PLOC – PPC	34	27.0	5.18	34.2	6.15	20	27.6	5.43	31.8	7.34	0.156	0.56
PAM	33	67.7	18.1	72.2	18.6	18	65.6	22.9	62.8	5.48	0.035	0.36

<sup>a</sup> Post-scores dependent variable, pre-scores covariate, age and sex controlled for.

<sup>b</sup> M pre-post-test change in PT and WL group, divided with pooled pre-test SD (Morris, 2008).

Even so, it is important to investigate if there are predictors of treatment failure and how to enhance the sustainability of the treatment. In a larger sample than in the present study, it would be possible to also examine potential subgroups that do not benefit from the PT. Exposure to intimate partner violence, as well as marital discord, have for example been proven to be serious risk factors for the development of DBPs (Davies & Cummings, 2006). These aspects should be assessed, not only because of their potential relation to the outcome of treatment but also to provide protection and safety to the child.

A further aim was to evaluate possible generalization effects on children's behavior from the home to the school context. No Swedish norms of the SESBI-R have been published, but the teachers' ratings of the children's DBPs in the present study were significantly higher when compared to US norms (Eyberg & Pincus, 1999) (SESBI-R IS:  $t = 4.28$ ,  $p < 0.01$ ,  $d = 0.67$ ; PS:  $t = -3.10$ ,  $p < 0.01$ ,  $d = 0.49$ ), thus the teachers did indeed see those children as having DBP. There were no changes in the SESBI-R ratings from pre-intervention to post-intervention for either the PT or the WL group. However, at the one-year follow-up, there was a statistically significant decrease in teachers' ratings. This may indicate that the effects of the PT can be generalized to the school context to some extent, but with a delay. These results should also be interpreted with caution since no follow-up data exist for the WL group. This is a serious limitation of the study, but it was considered not ethically defensible to randomize young children with serious behavior problems to a WL condition for more than a year, without any intervention. Still, Wilson (2003) in her meta-analysis of intervention programs addressing aggressive behavior in school concludes that no change or a worsening of problems is expected if the children do not receive intervention targeted also to their behavior in school. The low inter-rater agreement between mothers' and teachers' ratings is intriguing, especially in light of the children's high levels of behavior problems, according to both the mothers' and the teachers' ratings. Even if findings in the literature are consistent with low to moderate discrepancy between cross-informant behavior ratings (De los Reyes & Kazdin, 2004; Gresham, Elliott, Cook, Vance & Kettler, 2010; Grietens, Onghena, Prinzie *et al.*, 2004), this needs to be explored further.

A further aim of the study was to evaluate the effects of PT on the participating mothers' psychological symptoms, PPC and perception of parenting alliance. There was no statistically significant difference in pre- to post-ratings between the PT and WL groups in decrease in psychological symptoms, even if the mothers of the children in the PT group displayed a statistically significant pre to post change ( $N = 34$ ,  $t = 2.62$ ,  $p = 0.013$ ) whereas the mothers of the WL group did not ( $N = 20$ ,  $t = 1.15$ ,  $p = 0.263$ ). The results are in line with the finding that the short-term psychosocial health of mothers seems to be promoted by participating in PT programs (Barlow *et al.*, 2003). However, compared with the WL group, controlling for baseline levels, there was no statistically significant difference.

Mothers in both the PT group and the WL group reported at the post-ratings that they perceived more parental control pre to post and there was no statistically significant difference between the groups. However, it is noteworthy that the effect size of pre- to post-change difference between the PT and WL group was in the medium range ( $d_{ppc} = 0.56$ ).

With regard to perceived parenting alliance, the developments seemed to differ between the PT and the WL groups. While the PT mothers perceived a small increase in parenting alliance from their partner the mothers of the WL group perceived less so over the 6-month period from pre- to post-intervention. The difference in pre- to post-change ratings was statistically significant and the effect size was 0.36.

The increase in perceived parenting alliance in the PT group may be an effect of the fact that parents preferably participate together and thus learn to support each other in parenting. In the present study, 79% of the mothers participated with their partner. It may also be a result of the child displaying less disruptive behavior, with reduced strain on the parents. On the other hand, parents in the WL condition may be under increasing stress as their child's behavior problems continue. However, the finding is noteworthy and seems to underline the association between parental alliance and DBPs (Bearss & Eyberg, 1998).

In light of the ongoing debate about the implementation in Sweden of PT programs developed in the USA and about their transferability to a Swedish context the participating mothers' perception of the program is especially important. Indeed, the vast majority of the mothers had positive overall feelings about the program, and stated that they would recommend it to other parents. They also found the methods for reducing children's behavior problems to be appropriate and useful.

#### *Limitations and future research*

The most serious limitation is the small number of participants and the fact that the sample sizes were unequal, which decreases the power of the study. As a consequence, small to medium effects might not have been detected, which might, for example, be reflected in the non-significant difference between the PT and WL groups in pre- to post-PLOC ratings, in spite of the medium effect size. Another limitation, as discussed above, is that there was no one-year follow-up of the WL group.

The fact that mothers were initially asked to rate their children on the ECBI in a telephone interview, which is not in line with the instructions for the ECBI, should be noted. The ECBI is a parent paper-and-pen rating scale and the method used here may have influenced the within-groups comparisons. However, since the method was the same for the PT and the WL group, the effect on the between-groups comparison ought to be limited.

The current study indicates that it is possible to transfer the IY program from a US to a Swedish context, at least for children with clinical levels of DBPs. The next step would be to compare the effectiveness of the IY program with conventional treatment and other PT inventions. In addition, even if the IY program has proven to be effective it is important to focus on those cases where the IY program does not seem to be so helpful. In a stepped-care model, which resembles the practice in many outpatient settings, the effects of adding interventions to PT could be examined. The IY program already includes several programs besides PT, such as teacher training programs and programs directed directly to the child (the Dinosaur School). One area of interest is the lack of or limited generalization from the home to the school context. It would be of interest to explore if the addition of teacher training could increase the effect and to test whether, for example,

coordination meetings, where parents and teachers meet to discuss the developmental needs of the child (see, e.g., Axberg, Hansson, Broberg & Wirtberg, 2006), may further improve the effect. Other areas of interest are interventions directly directed to the children, such as the Dinosaur School, or addressing the reading ability of the child with literacy training, as described by Scott *et al.* (2010) and others.

To conclude, even if there are some serious limitations to the present study it seems possible to transfer a US PT program to a Swedish context, and to retain the positive effects on children's behavior. In addition, most of the participating mothers were very positive regarding the IY program.

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## NOTE

<sup>1</sup> Sixteen percent had an education level less than secondary school compared to 11% in Sweden as a whole, 47% had upper secondary school compared to 50% in Sweden as a whole, 38% had post-upper secondary school education compared to 37% in Sweden (Statistics Sweden, 2004).

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