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ABSTRACT

The present study is the first European evaluation of the Canadian parent training programme called Community Parent Education Program (COPE). In addition, it is the first to examine the effects of the COPE programme in different types of clinical and nonclinical samples. The main findings were that COPE was found to be effective in reducing conduct problems, hyperactivity/impulsivity, daily problem behaviours, parental stress, and lack of perceived parental control. However, the programme was not effective in reducing inattention, social competence deficits, or peer problems. Interestingly, the significant group effects were a result of significant differences between the two nonclinical intervention groups and the waiting-list control group, whereas the clinical intervention group did not differ significantly from the control group with regard to either child or parental variables. This points to the importance of evaluating parent training programmes in groups with different levels of severity so that parents are offered the type of training programme most suitable for their child's needs.

KEYWORDS

ADHD, ODD, parental control, parent education, stress

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EXTERNALIZING PROBLEM BEHAVIOURS in childhood such as Oppositional Defiant Disorder (ODD), Conduct Disorder (CD) and Attention-Deficit/Hyperactivity Disorder (ADHD) are the most common reasons for why children are referred to psychiatric clinics (American Psychiatric Association [APA], 1994). For the child, these behaviour problems have been shown to have serious, negative consequences at home, in school and with peers (for reviews, see for example Henker & Whalen, 1999; Whalen & Henker, 1999). The life quality of the child's family members is also often severely affected, with increased levels of family stress and higher levels of depression (e.g. Cunningham, Benness, & Siegel, 1988). With regard to ADHD, the Multimodal Treatment Study of Children with ADHD (MTA), has shown pharmacological treatment alone to be effective for the primary symptoms of hyperactivity, impulsivity and inattention using ratings from parents and teachers as well as classroom observations (The MTA Cooperative Group, 1999a, 1999b). However, it has also been demonstrated that medication treatment alone is less effective in certain subgroups such as in families of depressed parents, and among children with extremely high initial levels of ADHD symptoms or low child IQ (Owens et al., 2003). In addition, the MTA study showed that only the combined treatment condition (i.e. medication and psychosocial treatment) was superior to the community care in problem domains beyond the core ADHD symptoms such as internalizing problems, social skills, academic achievement and parent–child relationship (The MTA Cooperative Group, 1999b; Whalen, 2001). This is important, especially considering the fact that a reduction in core ADHD symptoms may not be the most important predictor of long-term outcomes for children with ADHD (Greene & Ablon, 2001). Thus, the use of a multimodal treatment appears to be the most sensible approach for children with ADHD, and for children with other externalizing problems such as ODD and CD psychosocial interventions are the most common treatment form.

In Sweden, where the present study was conducted, one common form of psychosocial treatment is parent training. A number of different training programmes are today offered to parents of children with disruptive behaviour problems, although several of these programmes have not been thoroughly evaluated, at least not using Swedish samples (although see Axberg, Hansson, & Broberg, 2007 for a Swedish evaluation of the Incredible Years Series). It should not be assumed that a programme with documented effect in one country will be as effective in another country, especially not as previous studies have demonstrated that the use of different parental practices are quite different in for example Canada (where the programme evaluated in the present study was developed) and Sweden (e.g. Durrant, Rose-Krasnor, & Broberg, 2003). In addition, very little is known about for whom these parent training programmes are most effective. Some programmes might be more suitable for parents of children with a diagnosable disorder, whereas others work best in community-based samples of parents with children with symptom levels below the clinical cutoff. In several studies examining the efficacy of intervention for externalizing behaviour problems, it has been found that interventions are most effective for children with severe initial behaviour problems (e.g. Brown & Liao, 1999). However, in a meta-analytic review by Reyno and McGrath (2006) it was concluded that more severe pretreatment scores are linked to negative outcomes in parent training.

A possible explanation for the inconsistencies in the findings described earlier could be that some studies have investigated effects of initial problem load in clinical samples, whereas others have investigated this issue in nonclinical samples. Investigations of the effects of initial problem severity in both nonclinical and clinical samples within the same study are needed to make sure that level of severity is appropriately matched to the level

of intervention that is required. In nonclinical samples, low problem levels could mean that there is not much room for improvement. In clinical samples on the other hand, children with severe behaviour problems may require more intensive intervention efforts than what is normally provided in parent education programmes in order for the intervention to have effects on behaviour.

In order to address the above-mentioned limitations, the present study examined treatment effects of the Community Parent Education Program (COPE) in families of children with different levels of externalizing behaviour problems. COPE is a Canadian programme developed by Cunningham and colleagues (Cunningham, Bremmer, & Secord-Gilbert, 1998). In line with many other parenting programmes (Barkley, 1997; Forehand & McMahon, 1981; Webster-Stratton, 2005), the strategies taught in the COPE programme are based on social-learning models and the teachers use modeling role-playing, goal setting and self-monitored homework strategies to induce new skills (Cunningham, 2006). In addition, the COPE programme has also been influenced by social-cognitive psychology, family systems theory, small-group interventions, as well as larger support-group-based programmes (for more detailed information of the programme structure, please see the Method part and Cunningham, 2006).

The most apparent difference between COPE and other parenting programmes is that this is a nondidactic, large-group, community-based programme. By locating the training programme to neighbourhood schools or community centres and by organizing the programme within the community rather than through a psychiatric clinic, community-based programmes have the advantage of being able to remove the logistic and psychological barriers that clinic-based programmes may pose. Cunningham, Bremner, and Boyle (1995) were for example able to show that economically disadvantaged families and families with children with more severe behaviour problems were more likely to enroll in and complete community-based than clinic-based parent training programmes. Cost analysis also showed that large group programmes are more than six times as cost effective as individual programmes (Cunningham et al., 1995). Regarding the effects of treatment, there are few published studies investigating the effects of the COPE programme. However, Cunningham and colleagues found the COPE programme to be effective in reducing disruptive behaviour problems in a community sample of children with high initial levels of these type of problems.

There are to my knowledge no published studies examining the effects of the COPE programme in Europe. The aim of the present study was therefore to conduct an evaluation of COPE in Sweden, where the programme is extensively used. In order to provide a more extensive evaluation compared to earlier research, four different groups were studied: a nonclinical group with high levels of externalizing behaviour problems (i.e. ADHD and/or ODD symptoms), a nonclinical group with low levels of externalizing behaviour problems, a clinical group of children diagnosed with ADHD and a nonclinical waiting-list control group. This allowed me to draw conclusions regarding whether COPE is suitable for parents of children with different levels of externalizing problem behaviours. Treatment effects were studied in terms of child behaviour problems (ADHD symptoms, ODD symptoms, social competence deficits, and daily problem behaviours), parental stress, and lack of perceived control. In addition, the present study examined parental views of the COPE programme with regard to satisfaction and perceived effectiveness of the different strategies in order to examine whether it is advisable to adapt the programme for continued use in Sweden

Method

Participants

The present study included children in four different groups: (1) a clinical intervention group (n = 25), (2) a nonclinical high symptom level group (n = 87), (3) a nonclinical low-symptom level group (n = 50), and (4) a nonclinical waiting-list control group (n = 57). The clinical sample was recruited from the Child and Adolescent Psychiatry Clinic at the Karolinska University Hospital, Huddinge, Sweden. Invitations to the COPE programme were sent out to parents with a child between the ages of 3 and 12 years who had been referred to the clinic due to severe problems with hyperactivity, inattention and/or conduct problems. A total of 38 families attended the first introductory session of the COPE programme, 25 families attended at least 5 out of the 10 sessions and 25 families (100% of those who attended at least 5 sessions) filled out questionnaires before and after the programme and were therefore included in the present study. All families in the clinical sample had a child who had been diagnosed with either ADHD and/or ODD and each child's diagnosis was also confirmed by the parents using a rating instrument including the symptom criteria for ADHD and ODD as they are presented in DSM-IV (APA, 1994; ODD = 47%, ADHD combined = 27%, ADHD hyperactive/impulsive type = 13% and ADHD inattentive type = 33%). In addition, 2 of the children had been diagnosed with obsessive compulsive disorder, 4 children with Tourette syndrome and 1 child had language and speech impairments.

The nonclinical groups included parents who attended the COPE programme in ten different areas in the Uppsala and Stockholm Counties, Sweden. Parents were recruited through advertisements/invitations to all children at local schools and preschools. No initial screening procedure for parents of children with behaviour problems was used, although for all areas except one, the advertisement/invitation informed the parents that the programme was intended for parents experiencing difficulties in managing their child's behaviour. At one of the locations, the invitation to the programme was even more general, with all interested parents being invited regardless of whether they felt that their child was hard to manage. At each one of the locations, a maximum of 26 parents could be accepted to the programme and if the number who applied was higher than 26, parents were randomly assigned to either the parental training group or to a waiting-list control group. However, in 8 out of 10 areas, all interested parents could be admitted to the programme, which resulted in a much smaller control group compared to parents who completed the programme. Most of the waiting-list controls were recruited from the area using a more general recruitment procedure and problem levels were therefore somewhat lower among these children. A total of 275 families attended the first introductory session of the COPE programme, 167 families attended at least 5 out of the 10 session and 133 families (80% of those who attended at least 5 sessions) filled out questionnaires before and after the programme and were therefore included in the present study. In order to study effects of problem load, the nonclinical sample was divided into those families with a child meeting the diagnostic criteria for either ADHD or ODD according to parental ratings (from now on referred to as the 'high symptom level group') and families with a child not meeting the diagnostic criteria for either ADHD or ODD (from now on referred to as the 'low symptom level group').

Of those families who were included in the study (including the clinical and nonclinical intervention groups as well as the waiting-list control group), questionnaires were filled out by either the child's mother or father, or both parents filled out separate questionnaires. As questionnaires were only obtained from one parent in a majority of the families, only maternal ratings were used in the present study, except in the few cases

where only paternal ratings were available (see more detailed information for each group in Table 1).

The COPE programme

COPE is a manual-based, large-group community-based parent education programme. A group can consist of as many as 25–30 parents, who meet with one or two trained group leaders for weekly 2-hour sessions over 10 weeks. To allow active participation, parents are divided into subgroups (5–7 members in each) and seated around separate tables. The programme is to a large extent participant driven and discussions are held both within the subgroups and in the large group. Each meeting is structured and includes the following phases:

1. Informal social activities;
2. Review of homework in subgroups;
3. Large-group discussions of homework projects;
4. Subgroups formulate solutions to videotaped vignettes of a problematic situation;
5. Large-group discussions of proposed solutions;
6. Leader models group's solution;
7. Subgroups brainstorm application;
8. Dyads rehearse strategies;
9. Homework planning; and
10. Leader summarizes and closes session.

At each session, a new strategy is taught. The COPE programme for example includes strategies for giving attention to positive behaviour, balancing time and attention among siblings, ignoring minor disruptions, managing transitions, planning ahead and reward systems. The parents are also taught the general approach to child management problems referred to as PASTE-ing problems. This includes (P) picking one soluble problem, (A) analysing the advantages and disadvantages of alternative solutions, (S) selecting the most promising alternative, (T) trying it out, and (E) evaluating outcome. For a more detailed description of the programme, please see Cunningham (2006).

Questionnaire

Externalizing problems Externalizing problems were measured using a questionnaire that includes the symptom criteria for ADHD and ODD as they are presented in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; APA, 1994). Ratings were made on a 4-point-scale ranging from 0 (never/seldom) to 3 (very often/always) and the scores used were the summed scores for the 18 items measuring ADHD (9 items tapping inattention and 9 items tapping hyperactivity/impulsivity) and the 6 items measuring ODD. Besides this, the number of symptoms for each child was counted in order to divide the nonclinical sample into two groups: one group with children meeting the symptom criteria for ADHD and/or ODD (i.e. the high symptom level group) and another group below the clinical cut-off with regard to both these disruptive behaviour disorders (i.e. the low symptom level group). A behaviour was considered present if the child received a score of 2 or 3 on a particular item and in line with DSM-IV, a cut-off of 6 symptoms of either inattention or hyperactivity/impulsivity was used for ADHD, and a cut-off of 4 symptoms were used for ODD. It should be noted that although this measure provides an estimate of the problem load, the present study only included parent ratings; other diagnostic criteria such as age-of-onset and duration of symptoms

were not measured. Thus, it is not known whether the children scoring above the symptom criteria according to parent ratings met the full criteria for ADHD or ODD.

Social functioning In the present study, social functioning was measured as social competence deficits and peer problems. These problems were measured using the *Strength and Difficulties Questionnaire* (SDQ; Goodman, 1997), which is a well-validated questionnaire that has been used several times before, also in Swedish samples (e.g. Smedje, Broman, Hetta, & von Knorring, 1999). The SDQ normally includes 5 subscales, although the subscales measuring hyperactivity/inattention and oppositional behaviour were not included as these behaviours had already been addressed using the symptom criteria for ADHD and ODD. The internalizing behaviour problem subscale was not included as the COPE programme was not intended for children with problem behaviours within this domain. Internal consistency was $\alpha = .70$ for the social competence deficit subscale and $\alpha = .78$ for the peer problems subscale. Please note the score for the social competence subscale is reversed so that high values on all scales included in the study indicate poor functioning and low values indicate good functioning.

Daily problems Daily problems were assessed using Barkley's Home Situation Questionnaire (Barkley & Murphy, 1998). This is a questionnaire that includes 17 daily situations and the parent has to decide whether or not a specific situation is problematic or not. The 17 situations include daily routines such as getting dressed and getting ready for school/preschool, as well as more social situations such as having friends over for dinner or playing with friends or siblings. Ratings were made on a 10-point scale ranging from 0 (no problem) to 9 (very severe problems) and the score used in the present study was the mean problem load across all 17 situations. Internal consistency was $\alpha = .85$.

Parental stress A shortened version of the *Swedish Parenthood Stress Questionnaire* (SPSQ; Östberg, Hagekull, & Wettergren, 1997) was used in the present study. The SPSQ is an adapted version of the Parenting Stress Index (PSI; Abidin, 1990), which only includes the parent domain of the PSI (i.e. different life situations in which parenthood can be experienced as demanding and creating problems). In normal Swedish samples, the SPSQ has been shown to have a stable factor pattern with 5 interrelated subscales: incompetence, role restriction, social isolation, spouse relationship problems, and health problems (Östberg et al., 1997). As it has been argued that one of the main advantages of large-group parent intervention is the fact that it encourages private contacts between the participants and thereby decreases social isolation, the 6 highest loading items from the SPSQ relating to social isolation were included in the present study (e.g. 'I have more contacts with other parents due to my child' and 'I feel lonely and without friends'). Besides this, the evaluation questionnaire included 2 items from the subscales measuring incompetence ('I feel that it is more difficult than expected to foster a child' and 'I often feel that I cannot handle things very well') and role restriction ('I feel trapped by the responsibility of being a parent' and 'It feels as if my child takes up all time'). The spouse relationship and the health problem subscales were not in included at all in the present study as the COPE programme was not intended to address these problem areas.

Perceived parental control Parental control was measured using one of the subscales (Parental control of child's behaviour) from the Parental Locus of Control instrument (PLOC; Campis, Lyman, & Prentice-Dunn, 1986). This subscale was selected because it has been argued (Hagekull, Bohlin, & Hammarberg, 2001) that this subscale focuses specifically on perceived parental control (e.g. 'I always feel in control when it comes to

my child' or 'My child's behaviour is sometimes more than I can handle (reversed)') rather than providing a measure of more general, stereotypic views of parenthood as the other PLOC subscales (e.g. 'There are no such things as good or bad children – just good or bad parents'). Ratings were made on a 5-point scale ranging from 1('Does not apply at all to my child') to 5 ('Applies very well to my child'). Internal consistency of the 10 items of perceived parental control as measured by Cronbach's alpha, was .83 and the score used in the present study was the mean of all items.

Parental satisfaction Parental satisfaction was measured by first asking the parents to rate their general view of the COPE programme on a 4-point scale (1 = not at all good, 2 = somewhat good, 3 = good, 4 = very good). Second, the parents were asked what parental strategy (each session of the COPE programme introduced a new strategy) they viewed as being most useful, and finally, whether there was any strategy that they did not view as being useful.

Data analyses First, difference scores were calculated as a measure of changes in child and parental variables between T_1 and T_2. Thereafter, one-way Analyses of Variance (ANOVAs) were used to study the main effects of group with regard to these differences scores (i.e. whether the change between T_1 and T_2 differed significantly between the four groups). In case of a significant or marginally significant main effect of group, planned comparisons were used to compare each one of the three intervention groups with the waiting-list control group. Cohen's (1988) effect size formula (d) with pooled standard deviations was thereafter used to study effect sizes with regard to these comparisons. In line with recommendations, an effect size of .20 was considered small, an effect size of .50 was considered medium, and an effect size of .80 was considered as large (Cohen, 1988). The difference scores were also used to study correlations between change in parental variables (i.e. parental stress and parental perceived control) and the change in each one of the child problem domains.

Results

Preliminary analyses

First of all, the three intervention groups and the waiting-list control group were compared with regard to number of attended sessions and several different background variables (see Table 1). The results showed that the four groups did not differ with regard to any of the background variables, except for the fact that the clinical intervention group and the high symptom level group included more boys compared to the waiting-list control group $\chi^2 = 37.91$, $p < .001$). Sex was therefore included as a covariate in all analyses. In addition, the clinical intervention group attended significantly fewer sessions compared to the two nonclinical intervention groups, $F(2, 157) = 9.19$, $p < .001$.

Effects on child variables

The mean values for all measures for each of the four groups at T_1 and T_2 are presented in Table 2 and results of the ANOVAs, including planned comparisons and effect sizes, are presented in Table 3. Results of the ANOVA examining main effects of group with regard to the difference scores showed significant effects with regard to ODD symptoms, hyperactivity/impulsivity, and daily problem behaviours, but not with regard to inattention, social competence deficits or peer problems. Posthoc analyses comparing each one of the intervention groups with the waiting-list control group revealed that for both ODD symptoms and hyperactivity/impulsivity, only the high symptom level group had

Table 1. Descriptive data of background variables for the intervention group and the waiting-list control group

	Clinical intervention group (n = 25)	*High symptom levels (n = 87)*	*Low symptom levels (n = 50)*	*Waiting-list control group (n = 57)*
Number of attended sessions	7.13	8.64	8.46	–
Rater (%)				
Mother	96	87	90	95
Father	4	13	10	5
Highest education (% mothers)				
9 years compulsory school	12	8	4	4
High school	42	59	65	41
University/college degree	46	33	31	55
Highest education (% fathers)				
9 years compulsory school	24	12	9	7
High school	43	62	77	56
University/college degree	33	26	14	37
Age (mean age in years)				
Mother's age	39	36	36	36
Father's age	39	38	39	41
Age of the child	8.2	7.0	7.0	6.8
Ethnicity (%)				
Children born in Sweden	96	93	98	95
Mothers born in Sweden	88	82	88	88
Fathers born in Sweden	95	91	87	82
Number of boys (%)	96	87	52	51
Number of siblings	1.58	1.38	1.51	1.18

changed significantly more between T_1 and T_2 compared to the waiting-list control group. When comparing the strength of the difference scores for the high symptom level group relative to the waiting-list control group, the results showed a large effect size with regard to ODD symptoms and medium effect size with regard to hyperactivity/impulsivity. All other effect sizes were small.

Effects on parental variables

With regard to parental variables, significant or marginally significant effects of group were found for all three aspects of parental stress, as well as with regard to perceived parental control. Posthoc analyses revealed that for all parental measures, the two nonclinical intervention groups had changed significantly more compared to the waiting-list control group. However, the changes in parental variables for the clinical intervention group was not significantly larger compared to that of the control group. Effect sizes were in the small range for all comparisons in difference scores between the high symptom level group and the control group. With regard to the comparison between the low symptom level group and the control group, all effect sizes were in the small–medium range, except for social isolation for which the effect size was found to be large.

Relations between change in parental and child variables

In order to determine whether changes in parental variables were related to changes in child behaviour problems, a set of correlations were computed (see Table 4). The results

Table 2. Means and standard deviations for all outcome variables for the three intervention groups and the waiting-list control group

	(1) Clinical intervention group (n = 25)		*(2) High symptom level group (n = 87)*		*(3) Low symptom level group (n = 50)*		*(4) Waiting-list control group (n = 57)*	
	T_1 *M (SD)*	T_2 *M (SD)*	T_1 *M (SD)*	T_2 *M (SD)*	T_1 *M (SD)*	T_2 *M (SD)*	T_1 *M (SD)*	T_2 *M (SD)*
Child Behaviour Problems								
Conduct problems	1.26 (0.71)	1.05 (0.69)	1.82 (0.58)	1.15 (0.52)	0.94 (0.47)	0.69 (0.52)	0.97 (0.64)	0.87 (0.64)
Hyperactivity/impulsivity	1.99 (0.66)	1.84 (0.56)	1.99 (0.53)	1.53 (0.58)	0.91 (0.49)	0.79 (0.50)	1.10 (0.66)	0.96 (0.60)
Inattention	1.68 (0.48)	1.63 (0.44)	1.69 (0.45)	1.45 (0.46)	0.98 (0.47)	0.88 (0.54)	1.02 (0.61)	0.94 (0.51)
Poor social competence	2.39 (0.89)	2.22 (0.90)	2.46 (0.82)	2.31 (0.83)	1.86 (1.09)	1.83 (0.65)	2.06 (0.70)	2.16 (0.78)
Peer problems	2.44 (1.02)	2.37 (1.15)	2.47 (0.82)	2.36 (0.84)	1.99 (0.78)	1.88 (0.75)	2.04 (0.81)	1.95 (0.83)
Daily problems	3.00 (1.45)	2.72 (1.90)	3.02 (1.35)	2.24 (1.26)	1.52 (1.20)	1.10 (1.00)	1.58 (1.26)	1.50 (1.34)
Parental stress								
Social isolation	2.60 (0.49)	2.62 (0.81)	2.58 (0.64)	2.46 (0.69)	2.40 (0.61)	2.02 (0.66)	2.23 (0.49)	2.22 (0.79)
Incompetence	3.09 (0.92)	3.17 (0.80)	3.28 (1.03)	2.94 (0.87)	2.96 (1.00)	2.56 (0.84)	2.97 (0.86)	2.95 (0.92)
Role restriction	3.81 (0.92)	3.74 (1.06)	3.46 (0.98)	3.19 (1.07)	3.14 (1.02)	3.01 (0.98)	3.05 (1.00)	3.22 (1.05)
Lack of perceived control	3.27 (0.75)	3.10 (0.80)	3.47 (0.65)	2.82 (0.72)	2.78 (0.63)	2.40 (0.63)	2.77 (0.77)	2.69 (0.68)

Table 3. Results of the ANOVAs showing main effect of group, posthoc comparisons and effect sizes for the three intervention groups

	F-value	*Posthoc comparisons*	*ES (1)*	*ES (2)*	*ES (3)*
Child Behaviour Problems					
Conduct problems	3.08**	2, 3 > 4	0.29	0.94	0.24
Hyperactivity/impulsivity	7.98***	2 > 4	0.00	0.62	0.16
Inattention	1.01		0.05	0.26	0.02
Poor social competence	1.13		0.59	0.14	0.16
Peer problems	0.06		0.03	0.11	0.02
Daily problems	2.79**	2, 3 > 4	0.23	0.58	0.52
Parental stress					
Social isolation	6.86***	2, 3 > 4	0.09	0.02	0.85
Incompetence	3.57**	2, 3 > 4	0.04	0.02	0.53
Role restriction	2.62*	2, 3 > 4	0.38	0.17	0.46
Lack of perceived control	7.03***	2, 3 > 4	0.25	0.74	0.61

1 = Clinical intervention group, 2 = High symptom level group, 3 = Low symptom level group, relative to the waiting list control group (4).
* $p < .10$; ** $p < .05$; *** $p < .001$.

Table 4. Correlations between parental and child variables with regard to change between T1 and T2

	Difference score (T1–T2)	
	Parental stress	*Lack of perceived control*
Difference score (T1–T2)		
Conduct problems	.22***	.50***
Hyperactivity/impulsivity	.11	.31***
Inattention	.22***	.22***
Poor social competence	.14*	–.07
Peer problems	.16*	.18**
Daily problems	.29***	.41***

* $p < .05$; ** $p < .01$; *** $p < .001$.

showed that changes in parental stress were modestly, although significantly, related to changes in symptoms of ODD and inattention, social competence, peer problems and daily problems. Changes in lack of parental control were significantly correlated with changes in all types of child behaviour problems except for social competence deficits.

Parental satisfaction with the COPE programme

Analyses of the questions relating to parental satisfaction with the COPE programme revealed that most of the parents were very enthusiastic about the programme. On a 4-point response scale (1 = not at all good, 2 = somewhat good, 3 = good, 4 = very good), as many as 79 and 86 per cent of the parents in the two nonclinical intervention groups reported that they thought the COPE programme was very good and all of the remaining parents rated the programme as good. In the clinical intervention group, 61 per cent of the parents rated the programme as very good, 35 per cent as good and 4 per cent as somewhat good. The difference in parental satisfaction between the three

intervention groups was significant, $F(2, 144) = 3.85$, $p < ,05$, with the parents in the clinical group being less satisfied with the programme compared to the other two intervention groups.

The strategy referred to as 'attention and praise' was reported as being the most valuable. This strategy trains the parent to attend to and praise positive behaviour in the child as this, according to basic cognitive-behavioural principles, will lead to an increase in this type of positive behaviour in the future. Two other strategies that were appreciated by the parents were 'reward systems' and 'ignoring negative behaviour'. The strategy 'time out' was perceived as the least valued by the parents, although it should be noted that 26 per cent of the parents thought that all strategies included in the COPE programme had been of value. The strategies that were thought of as most and least valued were very similar in all the three intervention groups.

Discussion

The present study is, at least to our knowledge, the first European study of treatment effects of the COPE programme using a control group. In addition, the present study is the first to examine the effects of the COPE programme in different types of clinical and nonclinical samples. The main findings were that COPE was found to be effective in reducing conduct problems, hyperactivity/impulsivity, daily problem behaviours, parental stress, and lack of perceived parental control. However, the programme was not effective in reducing inattention, social competence deficits, or peer problems. Analyses of the effects of COPE in different groups showed that the significant group effects were a result of significant differences between the two nonclinical intervention groups and the waiting-list control group, whereas the clinical intervention group did not differ significantly from the control group with regard to either child or parental variables. Parental satisfaction with the programme was very high in the two nonclinical groups, but somewhat lower in the clinical group.

The significant changes in externalizing behaviour problems and daily problem behaviours found in the present study are in line with the Canadian COPE study by Cunningham et al. (1995), as well as with several other previous studies that have examined the effects of other parent training programmes such as Webster-Stratton's (2005) 'The Incredible Years' programme or Barkley's (1997) Parent Training programme. The present study also found effect of the COPE programme on parental stress and perceived parental control. Interestingly, changes in these two parental variables were shown to be significantly related to changes in child behaviour problems. Thus, the more change the mothers experienced with regard to parental stress and perceived control, the more their children's behaviour problems changed.

Besides evaluating the effects of the COPE programme outside North America, a major aim of the present study was to investigate the effects of parent training in both a clinical and a nonclinical sample within the same study. The finding that the COPE programme did not have any significant effects with regard to either child or parental variables in the clinical intervention group could be said to be in line with the results of the MTA study in which parent training was no more effective than normal community care in reducing behaviour problems (The MTA Cooperative Group, 1999a, 1999b). However, there are also studies that have found effects of parent training programme in clinical groups (for reviews, see Daly, Creed, Xanthopoulos, & Brown, 2007; Pelham, Wheeler, & Chronis, 1998), although effects do not appear to be as consistently found for ADHD symptoms themselves, but rather for comorbid behaviour problems (e.g. aggression, defiance) and social functioning.

There are at least two possible explanations for why the present study found that the effects of COPE were more consistently found in the community-based sample compared with the clinical sample. First, it is possible that compared to the parents in the nonclinical groups, the parents in the clinical group had higher levels of psychiatric problems themselves and they may therefore have experienced more difficulties with implementing the strategies taught in the programme. In their meta-analytic review, Reyno and McGrath (2006) concluded that many of the variables that predict parent training response are associated with maternal mental health, particularly maternal depression. In addition, it has been found that maternal ADHD symptoms reduce the effect of parent training, and this effect was unrelated to other aspects of maternal health such as depressive symptoms and sense of competence (Sonuga-Barke, Daley, & Thompson, 2002). Unfortunately, maternal mental health was not measured in the present study and its effect on the result can therefore not be examined.

A second possible explanation for the lack of effects in the clinical group may be that, as argued by for example Brown and Liao (1999), parent training programmes may not be sufficient to affect the children with the most serious behaviour problems. The results of the MTA study show that only the combination of medication treatment and behavioural intervention was superior to community care in problem domains beyond the core ADHD symptoms and parents were more satisfied with treatment when it included a behavioural component (Whalen, 2001). Thus, behavioural intervention such as parent training may be most effective when used in combination with medication treatment. Third, in contrast to training programmes developed specifically for parents of children with ADHD such as Barkley's (1997) programme, the COPE programme does not include psychoeducation (i.e. an overview of ADHD including issues such as causes, risks and effective and ineffective treatments for the disorder). Barkley's programme has been shown to have significant effects (for a review, see Anastopoulos, Hennis Rhoads, & Farley, 2006) and it is possible that psychoeducation is an essential part that needs to be included in training programmes for parents of children with problems in the clinical range

Although there were several significant effects of the COPE programme with regard to child behaviour problems, the present study could not demonstrate any significant treatment effects for social competence deficits or peer problems. When interpreting these nonsignificant findings, three things should be mentioned. First, the COPE programme is primarily intended for decreasing externalizing behaviour problems and not social competence and peer problems. Second, the present study did not include any children's social skills activity group, although this has sometimes been included as a complement to parent training programmes (e.g. Cunningham, Clark, Heaven, Durrant, & Cunningham, 1989). Third, the present study only included two measurement points, one before the programme began and one immediately after the parents had completed the programme. It would have been valuable to also include a follow-up to determine how long lasting the obtained effects are, and also to see whether changes in some variables may occur some time after the training programme is completed.

First, it takes some time for the parent to fully implement the strategies taught in the parental training programme. Second, with regard to peer problems, it cannot be expected that a child who has been disliked by his/her peers suddenly would gain peer acceptance, even though that child displays less disruptive behaviour problems. Thus, the effects of COPE and other parental training programmes on variables such as social competence and peer problems may only be detectable some time after the programme has ended. In line with this interpretation, several parents in the present study reported an increase in some behaviour problem during the time of the programme, although they

attributed this increase to the fact that they were now setting more limits and they themselves felt more in control despite this increase in child behaviour problems.

Limitations and conclusions

The most serious limitation of the present study is the sole reliance on maternal ratings. This may have resulted in a treatment bias, whereby positive ratings of both child and parental variables at post treatment are reported as a result of the fact that the mother herself has participated in the treatment. However, the effects of treatment bias should most likely be the same across the three intervention groups and therefore cannot explain why treatment effects were stronger in the nonclinical groups. Another limitation concerns the lack of measures of maternal psychopathology. As mentioned earlier, previous research has shown that both maternal ADHD symptoms (Sonuga-Barke et al., 2002) and maternal depression (for a review, see Reyno & McGrath, 2006) reduce the effectiveness of parent training. A final limitation relates to the lack of follow-up data. As already mentioned earlier, it is important to investigate how long lasting the effects of parent training are. It is also possible that the effects of parent training increase over time as changes in both parental control and childhood behaviour problems (especially social competence deficits) occur relatively slowly and only after extended use of positive parental strategies.

Conclusively, the present study is one of the first to examine the effects of parent training in both clinical and nonclinical samples within the same study and the programme was shown to be effective in reducing childhood externalizing behaviour problems, problems in daily situations, as well as parental stress and lack of perceived parental control. However, a more detailed analysis of programme effects in different samples revealed that only in the non clinical intervention groups were the changes in problem behaviour and parental variables statistically different from the change in the waiting list control group. These results could indicate that the COPE programme is not as suitable for parents with clinically referred children as it is for parents of children with less severe behaviour problems, although future studies are certainly needed to examine possible moderating and mediating variables that can explain these differential effects in more detail.

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