

## EFFECTS OF COMBINED COGNITIVE BEHAVIOURAL TREATMENT WITH PARENT MANAGEMENT TRAINING IN ADHD

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**Abstract.** The aim of this study was to demonstrate the effectiveness of cognitive behavioural treatment (CBT) with a focus on academic skills and conduct problems and to increase parents' educational skills in managing aggressive and oppositional behaviour in a subsequent parent training (PMT). For this purpose 18 children with a diagnosis of ADHD combined type participated in the study. In an A-B study design the effects of a 12-week treatment phase (6 weeks CBT; 6 weeks PMT) were compared with a preceding 4-week baseline. Core symptoms of ADHD, conduct problems and individual problem behaviour were assessed by weekly administration of parent and teacher questionnaires. The results indicate a significant and generalized reduction of ADHD core symptoms, conduct problems and homework problems during CBT at home and at school. PMT resulted in a further amelioration of the cited symptoms. We conclude that CBT may be a promising component in the treatment of ADHD provided that aspects of generalization are considered during the treatment. PMT may be a useful adjunct in most cases as it is effective in situations where the ADHD child still has problems of self-guidance.

*Keywords:* Attention-deficit hyperactivity disorder, cognitive behavioural treatment, parent management training, aspects of generalization.

### Introduction

Recently published results from the MTA study group (1999) seem impressively to support the conclusion that a carefully executed regime of stimulant medication is superior to behavioural treatments and almost as effective as the combination of both approaches. By contrast, recommendations of the European professional consensus development group (Taylor et al., 1988) still intend medication as a first choice primarily in severe cases or if psychosocial interventions are not sufficient. This approach takes into account the widespread reservations of parents against first line medication regimes, but it also considers that some subgroups of ADHD (e.g. with evidence of co-morbid anxiety disorder) might have less benefit from stimulant medication and that some children have to be withdrawn from pharmacotherapy because of intolerable side effects. Moreover, combined medication and behavioural intervention might require lower psychostimulant doses (MTA study group, 1999). We

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intend to contribute to the current discussion by presenting our experiences with cognitive behavioural treatment (CBT) in combination with parent management training (PMT).

### Method

Eighteen patients (17 males) referred from the Child and Adolescent Psychiatric Outpatient Unit of the University Clinic Cologne aged between 6 and 12 years participated in the intervention. Diagnosis corresponded to Hyperkinetic Conduct Disorder (ICD-10 F 90.1) and based on a structured clinical interview along the diagnostic criteria of ICD-10 with the parents and a clinical examination of the child. Cognitive functioning was within the normal range in 16 children, two were learning disabled. Eight children received psychostimulant medication (methylphenidate 0.3–0.8 mg/kg body weight) but still presented substantial symptoms of ADHD. No subject changed medication status during the entire intervention. After a 4 weeks baseline the treatment program was subdivided into two sections of 6 weeks each and applied in the following sequence: 1. CBT 2. PMT.

Treatment effects were measured by weekly administration of rating scales to the parents and to the teachers. The core symptoms of ADHD and symptoms related to conduct behaviour problems were measured with an abbreviated German version (15 items) of the Yale Children's Inventory (Shaywitz, Schnell, Shaywitz, & Towle, 1986). We calculated a total internal consistency for the total score of .94. Cronbach's Alpha for each symptom subscale (hyperactivity, impulsivity, attention problems, conduct problems) ranged between .80–.88 (Froelich, Doepfner, Breuer, & Lehmkuhl, 2001). Conflict situations at home were measured in the Home Situations Questionnaire (Barkley, 1999). In the adapted German version of this Check List with 16 items on a 9-point rating scale an acceptable internal consistency ( $\alpha > .90$ ) was calculated. Homework problems were assessed in a modified 20-item version (4-point rating scale) of the Homework Problem Check List (Anesko, Schoiock, Ramirez, & Levine, 1987) with a sufficient readability ( $\alpha > .90$ ) for the German version (Doepfner, 1997). Finally, an Individual Problem List with three to four items (5-point rating scale) was applied to measure the effectiveness of the treatment on individually relevant problem behaviour of the children. The content of the treatment sessions were as follows:

*CBT.* CBT incorporated six one-hour lessons for each patient predominantly including training in self-instructional, self-monitoring and problem-solving skills. Cognitive modeling procedures were used and the tasks included attractive games e.g. puzzles, mazes, or picture sequences. Transfer to self-instructional problem-solving strategies on homework or school problems related to behavioural problems of inattention and impulsivity was initiated. Moreover, social-conflict situations occurring at home or at school were introduced. Most importantly, individually relevant academic or social problems were discussed during the sessions and homework assignments were given to the child to facilitate generalization of treatment components. Contingent reinforcement was given by the therapist for appropriate solutions and the children received one weekly short telephone call from the therapist to support treatment generalization. The parents and teachers regularly received a written handout about the treatment content. Finally, they were continuously asked to prompt and to reinforce appropriate behaviour of the child at home or school.

*PMT.* The parent component (Doepfner, Schuermann, & Froelich, 1998) was composed of six individual one-hour sessions. Its focus relied on giving the parents fundamental knowledge about symptoms, aetiology and treatment modalities for ADHD children. Moreover,

they were taught to give positive attention to appropriate behaviour, compliance to simple requests and to introduce a reward-oriented token system. Finally, punishment strategies such as response cost for minor non-compliance and time-out procedures for severe conduct problems were implemented.

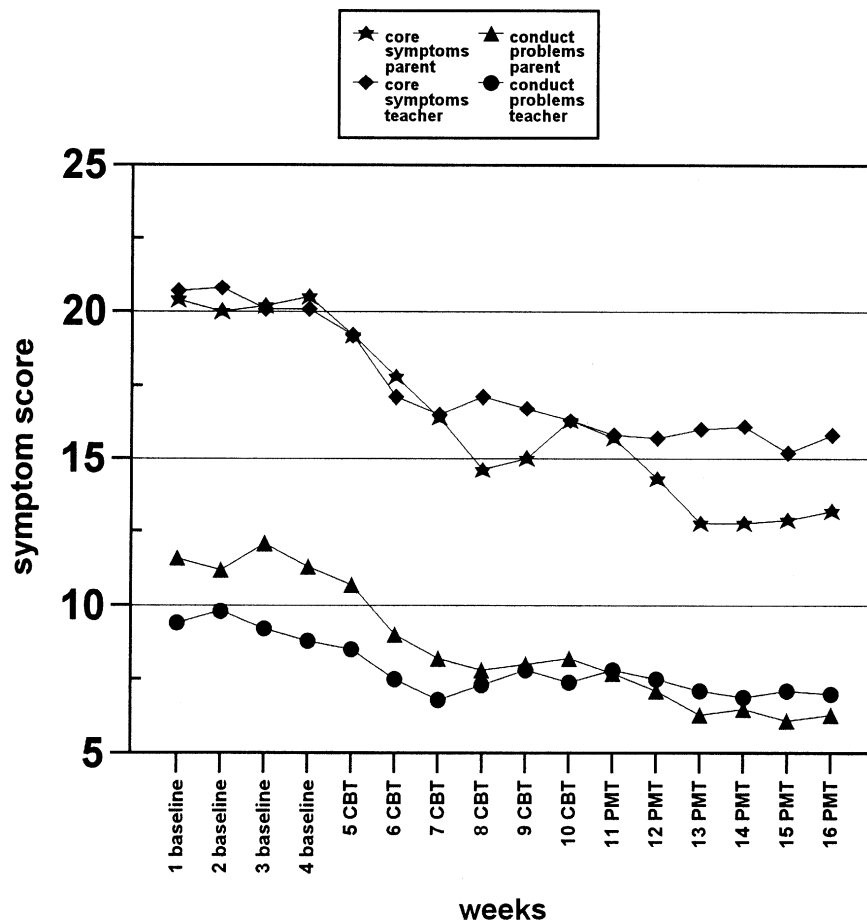
### Results and discussion

Multivariate analyses of variance (MANOVAs) with one within subject factor were performed to evaluate the treatment effects for the above cited variables. For all variables no statistically significant behaviour changes occurred during baseline. During the first treatment phase (CBT + GEN) ADHD core symptoms and symptoms related to conduct disorder significantly decreased according to parent ( $F(6.102) = 6,55$ ;  $p_{\text{core symptoms}} < .001$ ;  $F(6.102) = 7,81$ ;  $p_{\text{conduct problems}} < .0001$ ) and teacher ratings ( $F(6.96) = 4,35$ ;  $p_{\text{core symptoms}} < .001$ ;  $F(6.96) = 2,25$ ;  $p_{\text{conduct problems}} < .04$ ) (see Figure 1). The second treatment stage (PMT) once again resulted in a significant amelioration of both symptom clusters according to the parent ratings ( $F(6.102) = 3,74$ ;  $p_{\text{core symptoms}} < .002$ ;  $F(6.102) = 2,95$ ;  $p_{\text{conduct problems}} < .01$ ). Moreover, individually relevant behaviour problems diminished during both treatment phases ( $F(6.90) = 3,42$ ;  $p_{\text{CBT+GEN}} < .004$ );  $F(6.78) = 3,14$ ;  $p_{\text{PMT}} < .008$ ). Conflict situations at home diminished significantly during both treatment phases ( $F(6.102) = 5,83$ ;  $p_{\text{CBT+GEN}} < .001$ ;  $F(6.102) = 3,44$ ;  $p_{\text{PMT}} < .004$ ). For homework problems main treatment effects were especially observed during cognitive behavioural treatment  $F(6.102) = 7,11$ ;  $p_{\text{CBT+GEN}} < .001$ ).

In contrast to the majority of the preceding studies on cognitive behavioural treatment (Abikoff, 1991) our results indicate its efficacy. This result might be predominately due to several treatment immanent factors: 1) We took special care to implement treatment components that facilitate generalization into the natural environment, e.g. homework exercises. 2) Our CBT component contained few abstract cognitive tasks, mainly consisting of problems children face in the natural environment. 3) The training appealed to the patients because it included a number of child-adapted training materials and games involving self-teaching and self-monitoring exercises. 4) An indispensable component was the active and encouraging participation of parents and teachers during the treatment process. Children probably do not practise new skills outside the treatment situations unless prompted by their parents or teachers. 5) We feel that CBT can be more effective in ADHD children if self-instructional skills, self-assessment and self-monitoring are combined. 6) Similar to the results of Horn, Ialongo, Greenberg, Packer, & Smithberry (1990) combined CBT and PMT makes sense because it takes into account that most of the parents of ADHD children demonstrate a significant lack of educational skills. The evaluation of other preceding parent trainings (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993) show that parental self-confidence can be strengthened, parental stress reduced and the family relationship enhanced. In this way, combined child and parent-directed treatment trigger additive effects as both the child's and parents' competence increase.

However, there are a number of serious limitations of our study. First, the study sample was too small for any generalization on the ADHD population. Second there was no control group for an adequate analysis of specific treatment effects. Third, there was no follow-up to measure the persistence of effects. Instead our results indicate effects being solely measured during the intervention. In conclusion, it should be analysed as to which subgroups or what comorbidities of ADHD have the profile for optimal benefit of combined behavioural

**Course of ADHD core symptoms and conduct problems  
parent and teacher ratings  
Yale Childrens` Inventory**



**Figure 1:** Course of ADHD core symptoms and conduct problems during intervention: baseline, cognitive behavioural treatment (CBT) and parent management training (PMT).

treatment, an issue that could be realized by a differentiated selection of experimental groups (e.g. ADHD inattentive type, combined type or impulsive type). In addition, follow-up studies should be exercised over several months to measure the long-term effects of such an intensive treatment package e.g. in comparison to medical treatment. Moreover, it might be clinically useful to implement booster sessions every 3–4 weeks to make sure that the child continues to apply “CBT techniques” in his natural environment. We follow the clinical practice of bringing together 3 or 4 children and discussing with them academic problems or social conflicts. For the parents, guided follow-up sessions once a month are required to give them the opportunity to exchange experiences about PMT components and to refine

their educational style, e.g. in the application of token economy or other elements of the parent training.

Finally, in view of the results of the MTA cooperative group, combined psychosocial treatment approaches could be helpful for patients with a suboptimal response to stimulant medication, in cases where intolerable side effects contradict titration or higher doses. We should also note that combined medical treatment and behavioural intervention might contribute to a significant lower dosage of stimulants. Moreover, we particularly detected improvement in oppositional and aggressive behaviour. These symptoms were generally less improved through medical treatment in the MTA study.

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