

Treatment of Attention Deficit Hyperactivity Disorder:

Individual Child and Family-Based Therapies

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Summary

This chapter focuses on treatment approaches for attention-deficit hyperactivity disorder (ADHD) that are primarily psychosocial in nature and that involve working with the individual child and/or the family. Emphasis is on evidence-based interventions and their place in the overall clinical management of the child with ADHD.

Approaches to the treatment of ADHD vary depending on a variety of factors. These include the professional background and training of the clinician, with medically trained clinicians being more likely to select pharmacologic approaches to intervention and nonmedically trained clinicians tending to employ psychosocial treatments at the individual or family level. Treatments for ADHD can also range from those that are relatively straightforward and involve a single approach to intervention to those that are maximally complex and require intervention at multiple levels. Providing appropriate classroom accommodations, along with parent education regarding the management of ADHD, may be sufficient to manage a first-grader with predominately inattentive type ADHD of mild to moderate severity. A much more complex approach to management may be required in dealing with a 12-year-old with severe combined-type ADHD who also has multiple comorbidities. In such cases, treatment may require multimodal interventions at the individual, family, school, and perhaps community levels. Cases such as these often require a multidisciplinary approach to intervention and may involve several professionals working as part of a multidisciplinary team.

In the clinical management of ADHD, the approach to and degree of complexity of treatment should be dependent on the ways in which core symptoms of ADHD and associated features are manifested in a given child and the degree to which the child displays impairment in important areas such as family, school, and social functioning. Children with ADHD vary markedly, and treatment approaches need to be matched with an individual child's needs. In selecting treatment approaches it is also important, where possible, to focus on interventions supported by research findings. Only a limited number of approaches for the treatment of ADHD can be considered evidence-based. Currently, interventions that enjoy the strongest empirical support include the use of stimulant medications, behaviorally oriented parent training programs,

classroom-based interventions, and ADHD summer treatment programs. Stimulant medications are generally considered to be most effective in managing the *core symptoms* of ADHD whereas psychosocial treatments are usually deemed most valuable in dealing with the psychological and behavioral problems that children with ADHD often display. To date, approaches such as biofeedback, dietary restrictions, allergy treatments, and play therapy have received little support from controlled studies assessing the effectiveness of these treatments for children with ADHD.

Assessment for Treatment Planning

Assessment is an essential prerequisite for effective treatment. Obviously, it is essential for the ADHD evaluation to involve a careful assessment of the presence and severity of core symptoms of hyperactivity/impulsivity and inattention, the age of symptom onset, symptom duration, pervasiveness, and the degree of impairment in social, academic, and family functioning that results from these symptoms. Although it is necessary for the assessment to provide information regarding the degree to which the child meets diagnostic criteria as outlined in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, a comprehensive assessment involves more than this; it should rule out conditions that mimic symptoms of ADHD and should provide information regarding possible comorbid conditions that need to be considered in treatment planning.

A number of conditions can mimic symptoms of ADHD. Included here are conditions such as anxiety and mood disorders, seizure disorders, auditory processing disorders, specific sensory deficits (eg, visual and auditory impairments), posttraumatic stress disorder, and bipolar disorder that can result in attention problems and/or symptoms of hyperactivity. Clearly, it is necessary to rule out these conditions to avoid misdiagnosis and inappropriate treatments.

It is important that approaches to assessment also be broad enough to highlight other conditions that may co-exist with ADHD. Here, it can be noted that approximately one-half to two-thirds of clinical cases display some sort of comorbidity. Among the most common comorbid conditions are learning disabilities, oppositional defiant and conduct disorders, with a smaller but significant number of children also displaying anxiety and depressive disorders as well as comorbid tic disorders. A small number of children may also display evidence of bipolar disorder, which not only can mimic ADHD symptoms but also can occur as a comorbid condition.

For children displaying comorbid conditions, simply treating core symptoms of ADHD is not enough. Appropriate case management requires addressing the full range of presenting clinical problems. For example, in instances where a child not only shows features of ADHD but also meets diagnostic criteria for oppositional defiant disorder and learning disability, treatment should focus on problems associated with each of these areas. This might involve pharmacologic treatment for managing the child's core ADHD symptoms, parent-oriented behavior management approaches to modify oppositional behavior, and special education instruction and classroom accommodations to assist the child academically. Likewise, in the case of a child with ADHD and a comorbid anxiety disorder, it will be necessary to treat the child's anxiety related difficulties as well as the symptoms of ADHD. With children displaying other patterns of comorbidity, other approaches to treatment may be required.

A comprehensive approach to assessment should also provide a strong foundation for treatment planning and for monitoring treatment outcome. Especially important in this regard is the use of evidence-based measures that assess areas of impairment displayed by the child. Measures of impairment are important because they provide information regarding how the

child's symptoms affect his/her real-world functioning in important areas, such as in the home, at school, and with peers. And, research suggests that children who have comorbid conditions in addition to ADHD are likely to show greater levels of impairment across these key domains. It is essential that treatments of children with ADHD target impairments in these areas, as impairment in family, school, and social functioning are highly related to negative long-term outcomes (See Pelham, Fabiano & Massetti, 2005). Note that indices of impairment, like symptoms, can also be assessed over time to document treatment progress.

On the Role of Pharmacologic Approaches to Treatment

Although this chapter focuses largely on psychosocial approaches to the treatment of children with ADHD, it is important to comment, at least briefly, on the usefulness of drug treatments, as they are often used in combination with psychosocial treatments. Suffice it to say that numerous well-controlled studies indicate stimulant medication involving different formulations of methylphenidate and amphetamine, in both short- and long-acting forms, is highly effective in treating children and adolescents with ADHD. Indeed, the American Academy of Pediatrics has suggested that at least 80% of children will respond to one of the stimulants. The use of stimulant medication has clearly been shown to be an empirically supported treatment approach for managing the "core symptoms" of ADHD. In addition to stimulants, an additional ADHD medication, atomoxetine (Strattera), has more recently been approved by the United States Food and Drug Administration. This drug, a non-stimulant norepinephrine reuptake inhibitor, has enjoyed some success as a result of its purported effectiveness, reduced side-effect profile, and the fact that, unlike stimulants, it is not a controlled substance. Regarding the use of medication, it can be noted that findings from the Multimodal Treatment Study of Children with ADHD suggest that while pharmacologic

approaches have been found to be highly effective in the management of core ADHD symptoms, psychosocial treatments are likely to be most useful in dealing with various comorbid conditions and other problems that can result from or otherwise accompany core symptoms (See Chronis, Jones & Raggi, 2006). The following sections briefly describe the nature of a range of child and family-based psychosocial treatments that are likely to be useful in treating the broad range of difficulties often experienced by children with ADHD and their families.

Individual Approaches to Intervention

School-based Interventions

As children with ADHD typically display symptoms and impairments across settings, it is often necessary for the child's treatment plan to involve school-based interventions. This planning often includes the development of a 504 plan that outlines classroom accommodations designed to minimize the impact of ADHD symptoms on academic functioning. The focus of the 504 plan is often on providing the child with a learning environment that encourages appropriate behavior, helps the child focus and concentrate, and fosters academic achievement. An example of such accommodations might include seating the child in the front of the classroom, near the teacher and away from doors, windows, and other children who may be distracting. Working with the child to break large tasks down into smaller units, providing advance notice about transitioning from one classroom activity to another, and providing more time for the child to take important exams and complete tasks are examples of other, often useful, classroom accommodations.

Children with ADHD also often benefit from a classroom that has a favorable teacher-student ratio (that better enables the teacher to redirect the child if he or she gets off task and to reward on-task behavior), is relatively structured, and has clearly defined classroom rules. It is

helpful if instructions provided to the child are simple and succinct and teachers make certain that the child understands instructions and repeats them, if necessary, to ensure understanding. The use of day planners to ensure that the child has correctly written down assignments and allows parents to indicate that assignments have been completed can also help minimize the impact of attention problems. Likewise, it is often helpful for teachers to adhere to a routine where they alternate low energy activities with higher energy physical reprieves throughout the day. Because children with ADHD often find it easier to maintain attention when learning materials are highly stimulating, it is helpful for lesson plans to combine hands-on projects, films, and small group work with traditional instructional approaches whenever possible.

Classroom accommodations like those just described are frequently combined with behaviorally oriented interventions carried out within the classroom. Teachers may reward the child for staying in his or her seat, for staying on task, and for behaving appropriately while ignoring or using other methods such as time-out procedures in response to disruptive child behavior. Programs where children receive points or tokens for appropriate behavior (that can be exchanged for back-up reinforcers) and negative consequences (eg, the removal of tokens or points) for inappropriate behaviors are also frequently used. Finally, daily behavior report cards that outline specific targeted behaviors (eg staying seated, staying on task, raising a hand before talking) are frequently used to improve classroom behavior and as an effective teacher-to-parent feedback device.

It is important to note that while these types of classroom accommodations can be useful in dealing with the child's core symptoms in the classroom, children who have comorbid learning disabilities or other significant academic impairments may require extensive special educational assistance as well.

Summer Treatment Programs

In addition to the beneficial effects of individualized classroom accommodations provided throughout the academic year, many children with ADHD have also been shown to profit from participation in summer treatment programs. These intensive evidence-based treatment programs, carried out in settings that involve both academic and recreational activities, typically combine a range of treatment components that have been shown to be highly effective in working with this clinical population. As such, they often include behavioral parent training, a token or point system involving positive reinforcement, the use of effective commands, time-out procedures, a daily behavior report card, social skills training, training in sports skills, and training in effective problem-solving approaches. Research suggests that children who participate in this type of intensive treatment milieu typically make gains in a wide range of areas where they have previously demonstrated impairment. For example, such treatment programs appear to improve children's relationships with peers, their interactions with adults, their academic functioning, and their level of self-esteem.

Cognitive Behavior Therapy

Cognitive behavior therapy (CBT), as applied to children with ADHD, has traditionally focused on helping these children improve behavioral control, improve their adaptive skills and become better problem-solvers. It has been assumed that through modeling and role playing, and the use of other cognitive behavioral approaches, therapists can help children with ADHD learn to 1) better monitor their own behavior, 2) consider, implement, and evaluate the outcomes of various possible solutions to problem situations, and 3) provide themselves with contingent reinforcement for their behavior. The premise behind these intervention goals is that children

with ADHD lack sufficient self-regulatory skills as a result of their impulsivity and hyperactivity. Although intuitively appealing, research on the effectiveness of CBT approaches in improving *core features* of ADHD has not convincingly demonstrated clinical efficacy in modifying behavioral or academic functioning. The major problems appear related to children's difficulty in generalizing the skills to different situations, particularly in the absence of prompting from others.

Although of limited effectiveness in modifying the core symptoms of ADHD, cognitive behavioral approaches seem more useful in treating comorbid conditions that often occur with ADHD, including both externalizing and internalizing problems. CBT can help older children and adolescents with externalizing disorders develop anger management strategies and become better problem-solvers through learning to generate more adaptive self-statements, taking other people's perspectives, generating alternative solutions in anger-provoking situations, and evaluating consequences of behavior. When used within the context of treatment for internalizing conditions, cognitive behavior strategies help children modify maladaptive or distorted thoughts, beliefs, or images that are contributing to anxiety or depressive symptoms. Behavioral strategies for anxiety can also include relaxation training and in-vivo exposure, whereas interventions for depression can also include increasing pleasant activities.

Social Skills Training

Children with ADHD often experience peer interaction problems as a result of their difficulty in attending and responding appropriately to social cues and their difficulties in social perspective taking and behavioral regulation. Research has further shown that aggressive behavior, often displayed by children with ADHD, is a strong risk factor for peer rejection. Social skills training has, therefore, been implemented as a treatment option to encourage more

effective and positive interactions between ADHD children and their peers. Specifically, social skills groups often involve modeling appropriate social interactions and using contingency management approaches to increase children's self-awareness and self-monitoring, improve social problem-solving skills, teach anger management strategies, and shape adaptive conversational skills. An important part of social skills training for ADHD children with comorbid aggressive behaviors is to help these children modify their maladaptive tendency to attribute hostile intent to peers during ambiguous social interactions. Some have indicated that social skills training tends to work better in a group format because of the difficulty children with ADHD have with self-observation and the opportunity in groups for feedback, modeling, and contingent reinforcement.

Unfortunately, studies evaluating clinic-based social skills training programs with children displaying ADHD suggest only limited efficacy. More recent research suggests small, short-term improvements in social behavior for young children with conduct problems who receive group social skills training at school. The heterogeneity within the ADHD population (presence of comorbid disorders, varying levels of baseline social skills deficits) and the difficulty in tailoring interventions accordingly have been cited as reasons for the lack of effects. Generalizability of treatment effects to home and school has also been limited, likely in part due to the limited involvement of caregivers in many of the social skills groups evaluated and the difficulty children have in applying skills in different settings. Results from some recent studies have suggested that combining parent training with social skills training may result in larger treatment effects. Involving peers as tutors, or involving children in student-mediated conflict resolution programs, may improve treatment effects, but more research will be necessary before firm conclusions can be drawn.

Family-based Interventions

Parent Training Programs

Behavioral parent training is a prime example of a family-based treatment that has been shown to be highly effective in managing many of the disruptive behaviors displayed by children with ADHD as well as those with co-occurring conditions such as oppositional defiant or conduct disorder. Within this type of program, parents learn to create a structured, predictable environment in which they reward positive behaviors and apply negative contingencies in response to problem behaviors. Reinforcements can include praise, positive attention, or tangible rewards; and depending on the severity of the child's inappropriate behavior, punishments can take the form of loss of previously earned rewards, time-out or other contingencies such as ignoring. Careful monitoring and the application of consistent contingencies by the parent and across parents are crucial to the success of parent training programs.

One popular parent-training regimen is based on the principles outlined in Gerald Patterson's book on coercion theory (1982) and is further illustrated in his book *Living With Children* that was specifically written for use with parents and teachers. This program is applicable for children and adolescents between the ages of 6 and 16 and employs multiple treatment sessions, with the content of sessions patterned after material included in *Living with Children*. This treatment guides parents in identifying specific problem behaviors that serve as targets for treatment, monitoring and rewarding positive behaviors, and ignoring or using negative consequences to deal with problem behaviors. Numerous studies have documented the effectiveness of this social learning approach in fostering positive interactions between parents and children and in decreasing child/adolescent conduct problems. Indeed, this treatment

approach has been documented sufficiently to warrant its designation as an evidence-based child treatment.

Another empirically supported treatment for dealing with childhood behavior problems is Videotape Modeling Parent Training developed by Carolyn Webster-Stratton at the University of Washington. This treatment approach also teaches parents practical behavior management skills but does so through the use of videotaped lessons. This form of treatment is usually administered by a therapist in a group situation, with ample opportunities to discuss the presented material at the conclusion of the lesson.

An additional evidence-based parent-training program that is worth mentioning in greater detail is parent-child interaction therapy (PCIT), developed by Dr. Sheila Eyberg and her colleagues and students at the University of Florida. PCIT is designed to improve dysfunctional exchanges between parents and their pre-school aged children and reduce the behavior problems often seen in young children with ADHD and comorbid oppositional defiant disorder. PCIT incorporates two phases of treatment. The first phase sets the stage for effective discipline by enhancing a positive relationship between parent and child, thus encouraging a nurturing and positive environment within which therapy will take place. During the first stage of PCIT, Child Directed Interaction (CDI), parents must consistently avoid commands, questions, and criticisms as they play, positively interact with, and reinforce their children. Once parents have mastered the skills that strengthen the attachment relationship, treatment progresses to the second phase (Parent Directed Interaction: PDI) during which parents learn to give clear, direct commands in various play situations. Parents also practice setting limits through the use of contingencies. A parent gives praise if the child complies with an instruction but uses time-out when the child disobeys. During both phases of therapy, parents wear a “bug-in-the ear” device through which

therapists observing behind a one-way mirror can provide coaching on how to use the newly acquired interaction skills. There is no predetermined number of sessions the parent-child dyad must attend; completion is criterion-based and depends upon mastery of skills and a significant decrease in noncompliant and problematic behavior. PCIT is an evidence-based intervention that has been demonstrated to be highly effective, even years after termination of therapy, in dealing with the oppositional-defiant and conduct disordered behaviors often displayed by children with ADHD. Although PCIT was initially developed as an approach for treating young children with oppositional defiant and conduct disordered behavior, it has now been demonstrated to be of value in working with abusing parents and their children, developmentally delayed children with disruptive behavior disorders, and has also been adapted for use with children displaying anxiety disorders.

More recently, research appears to suggest that, apart from its usefulness in treating oppositional defiant/conduct disordered behavior, PCIT has the potential to directly impact ADHD symptoms, leading to reductions in hyperactive behavior, more flexible temperament, and *potentially* a decreased need for stimulant medication. Additional research, is currently underway at the University of Florida to further determine the usefulness of PCIT in reducing core symptoms of ADHD in very young children diagnosed with ADHD who are not being treated pharmacologically. A question of some importance is whether a psychosocial treatment such as PCIT can, when used with very young children, decrease the need for pharmacological treatment in managing ADHD symptoms.

On the Need for Family System Interventions

Most family-based approaches to treating ADHD have focused on reducing problem behaviors displayed by the ADHD child rather than on systematic attempts to intervene at the

broader family systems level. Although reducing core symptoms of ADHD and symptoms of common co-occurring conditions through the use of medication or other treatments is clearly desirable, it is clear that parents (and siblings) of children with ADHD can also be affected by having a child with ADHD in the family. Indeed, family stress resulting from this disorder can contribute to a range of difficulties for family members and family functioning.

The potential impact of ADHD on the family is highlighted by the fact that children with this disorder often display behaviors parents and other family members find highly disruptive. This stress results, not only from dealing with the child's inattention, impulsivity and hyperactivity, but also from the burden placed on parents as a *result* of the child's problem behaviors. For instance, parents must often deal with repeated phone calls from teachers resulting from their child's misbehavior or their academic problems. They often have to "explain" their child's behavior to other parents. They are often restricted socially because of their inability to find someone to care for their child. They often must miss work to attend clinic appointments. Many worry incessantly (with some justification) about the possibility of accidental injury to their child as a result of his or her behavior. Dealing with problem behaviors displayed by a child with ADHD can also leave too little time to meet the needs of siblings and often results in parental conflict regarding how to discipline the ADHD child. These represent only a few of the many stressors experienced by parents of children with ADHD.

That these types of stressors can have an impact on the family is supported by studies suggesting that ADHD-related behaviors can result in negative parent-child interactions that may in turn contribute to the development of conduct disordered behavior. ADHD-related stress can also contribute to the development of problems in parents as well. For example, parents of children with ADHD have been shown to display elevated levels of alcohol consumption,

increased levels of marital discord, increased role restriction, higher levels of social isolation, increased problems of psychological adjustment and experience other stress-related outcomes. Such findings suggest that there is a significant family burden associated with having a child with ADHD and that this can have a significant impact on family mental health and functioning. As research has consistently demonstrated the negative effects of stress on attention, it seems likely that increased levels of stress may also decrease the parents' sensitivity to the nuances of their child's behavior. This may make it more difficult for parents to attend to the range of details required to effectively implement complex child behavior management programs that are designed to reduce the very behaviors that contribute to parental stress.

Although more research is needed to clarify the full range of outcomes associated with ADHD, existing findings suggest attention needs to be given to assessing family stress levels in this clinical population. Where indicated, parents and other family members should also be helped to find ways to cope with ADHD-related stress so as to reduce potential negative outcomes. Although there are presently no empirically supported treatments specifically designed to reduce stress in families of children with ADHD, it would seem that attempts to intervene with families experiencing high levels of ADHD-related stress might involve several elements.

One essential element is likely to involve family education to help parents and siblings better understand the nature of ADHD. Often the level of family stress can be greatly minimized once all family members understand the nature of the disorder and that the child's ADHD is not the result of inadequate parenting or something that the parents or siblings are responsible for and must feel guilty about. Learning that excessive activity often declines in adolescence, learning about the types of situations that may exacerbate or decrease symptom severity, and

recognizing that there are classroom interventions that can help with their child's inattention and discovering that many children with ADHD grow up to be successful adults can also decrease parent stress levels.

A second essential element involves parents receiving increased levels of social support as they attempt to deal with their child's ADHD symptoms and associated stressors. Here, support might come from working with parents in ADHD therapy groups or through parent involvement with groups such as Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD), which has chapters in many larger communities. Social support has been repeatedly shown to serve as an important stress buffer and may be especially helpful when the support comes from individuals who are aware of how stressful parenting an ADHD child can be.

Training parents in ways to effectively manage difficult child behavior can also minimize the stress of dealing with the ADHD child. Such training is likely to not only reduce the stressfulness of the child's behavior as behavior change occurs, but can also increase the parent's sense of control, their sense of parenting competence, and their satisfaction with parenting. In some instances, individualized approaches to parent stress management that involve other methods such as relaxation training and cognitive behavioral interventions may also be helpful.

Although not applied specifically to families of children with ADHD, it is noteworthy that a family-based intervention approach that included the elements discussed here has been successfully used to reduce parent anxiety, depression, and family stress and increase feelings of parental competence, satisfaction, and attachment while decreasing problem behavior in families of preschool children with difficult temperament, which is often seen as precursor to ADHD. It

seems likely that similar approaches may prove useful with parents of children with ADHD, especially if combined with other individualized approaches to stress management.

It must be emphasized that treatments for ADHD should not focus solely on the child. Given the seemingly ubiquitous nature of ADHD-related stress in families of children with ADHD, it would seem important to routinely assess stress levels in these families and assist parents and other family members in coping with this stress. The problem of ADHD is not just the child's – it belongs to the entire family! And, in different ways, all may need help in coping with this disorder.

Suggested Readings

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Sheeber LB, Johnson JH. Evaluation of a temperament focused parent-training program. *J Clin Child Psychology* 1994: 23; 249-59.

Practitioner and Patient Resources

National Resource Center on ADHD

National Resource

8181 Professional Place, Suite 150

Landover, MD 20785

800-233-4050

<http://www.help4adhd.org>

A joint venture of the Centers for Disease Control and C.H.A.D.D., the National Resource Center on ADHD is a clearinghouse to disseminate science-based information on ADHD. Information is available online, as well as from a comprehensive library of books, journals and reports housed in the home office. The center also provides numerous fact sheets on all aspect of ADHD. Overall, this center is an excellent information source for both parents of children with ADHD and professionals working in this area..