

# STUDENTS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER: COLLABORATIVE STRATEGIES FOR SCHOOL COUNSELORS

*The school setting can be a difficult place for children with attention deficit hyperactivity disorder (ADHD). The core symptoms of ADHD, which include inattention, hyperactivity, and impulsivity, make meeting the curriculum demands of the classroom challenging. That ADHD negatively impacts not only academic performance but also social and emotional functioning is well established (Lee, Lahey, Owens, & Hinshaw, 2008). Given the negative consequences of ADHD, effective school-based interventions are warranted. School counselors are uniquely positioned to implement strategies for children with ADHD to maximize their capacity for learning. This article provides specific strategies that school counselors can provide collaboratively to enhance the academic and social functioning of children with ADHD in school.*

Attention deficit hyperactive disorder (ADHD) has been identified as one of the most common behavioral disorders of childhood (Center for Disease Control and Prevention [CDC], 2010) with rising prevalence rates. Significantly, ADHD affects 3-5% of children every year (U.S. Department of Health & Human Services [HHS], 2011), with boys approximately three times more likely to be diagnosed with the disorder (CDC, 2010). The extent to which ADHD adversely affects the overall functioning of children and adolescents cannot be underestimated. It is well documented that the attention and associated behavior problems that children with ADHD experience negatively affect academic performance and school functioning (Shillingford, Lambie, & Walter, 2007). In light of the deleterious consequences of ADHD, effective school-based interventions are needed. This article provides an overview of ADHD in children, including prevalence, associated characteristics, comorbidity, and interventions that school counselors may employ in collaboration with teachers and parents to support students diagnosed with this disorder.

## DEVELOPMENTAL CHARACTERISTICS

Childhood ADHD is characterized by three core characteristics that include inattention, hyperactivity, and impulsivity, and affects millions of children worldwide. However, the age and developmental level of a child often influence how symptoms are expressed.

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**M. Ann Shillingford-Butler, Ph.D.**, is an assistant professor and **Lea Theodore, Ph.D.**, is an associate professor, both with the College of William and Mary. E-mail [mashillingford@wm.edu](mailto:mashillingford@wm.edu)

Characteristics of ADHD typically appear during the preschool years and include strong and intense reactions to daily events, difficulty with delayed gratification, becoming bored easily, talking excessively, interrupting the activities of others, moving from one activity to another, excessive activity, and doing things without thinking (Campbell, 2002; Greenhill, Posner, Vaughan, & Kratochvil, 2008). The behaviors evidenced by children with

these challenges including difficulties with executive functioning, poor academic achievement, social struggles, and health-related problems.

### Executive Functioning

Children and adolescents with ADHD evidence deficits in executive functioning, which is responsible for self-regulation of behavior. More specifically, executive functions are responsible for organization, planning, working

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ADHD exceed the appropriate levels of behavioral comportment expected their same-aged peers. Although adolescents with ADHD may evidence a reduction in their symptomatology, many do not outgrow their difficulties. Rather, hyperactive and impulsive behaviors may decline, but the disorder continues into the teenage years for approximately 50% of adolescents (Spencer, Biederman, & Mick, 2007).

## ADHD IN THE SCHOOL SETTING

The school setting can be a difficult place for children with ADHD because symptoms are diametrically opposed to expectations in a traditional classroom, and the behaviors may prolong into adulthood (National Institute of Mental Health [NIMH], 2013). The core symptoms of ADHD make meeting the curriculum demands of the classroom challenging. School personnel should be knowledgeable regarding the various associated issues that children with ADHD may face. The following sections review some of

memory, and self-regulation of arousal levels. Executive functions allow children to purposefully control their attention and engage in goal-directed activities (Brown, 2000). These abilities are integral to focusing on tasks that require concentration. Impairment in executive functioning results in poor sustained attention, particularly on tasks that are routine. Thus, in the classroom, children with ADHD may become easily distracted, forget information that was just read, and lose their concentration. This results in minimal effort towards completing tasks, particularly assignments that are repetitious and that do not provide immediate rewards (Martel, Nikolas, & Nigg, 2007). Moreover, since children with ADHD also exhibit deficits in working memory, or the ability to retain facts while manipulating information, they are less likely to complete tasks or follow multiple-step directions (Loe & Feldman, 2007).

The ability to organize and prioritize information is another executive function that is impaired in children with ADHD. Deficits in this area result in difficulty beginning a task and organizing assignments. For example,

a teacher may have assigned a homework task to write about a favorite family vacation. Children with ADHD may sit down in front of their computer, but rather than focusing on the content of the written language assignment, may spend hours examining the different font styles and sizes, fiddling with margin sizes, and looking at clip-art that would help depict aspects of their vacation. Although these students may have spent hours working on their assignment, they may not have written anything because too much time was spent working on ancillary aspects of the assignment rather than content. This illustrates the difficulty of assignment completion for children diagnosed with ADHD because their attention may be split between many stimuli. Deficits in executive functioning also result in difficulty controlling emotions and arousal level, which often results in overreacting to positive and negative events. For instance, when children with ADHD hear exciting news, they may yell loudly and jump about, unable to contain their happiness (Brown, 2000). Moreover, because they struggle to control their emotions, children with ADHD have trouble managing disappointment, act or speak before thinking, are easily irritated, and are sensitive to criticism.

### Academic Achievement

Academically, most children with ADHD have difficulty concentrating in school, which makes it difficult for them to complete assignments and pay attention in the classroom. This results in deficits in the acquisition of basic academic skills. Further, their decreased academic engagement and inconsistent rates of work completion may account for underachievement (DuPaul, Stoner, O'Reilly, 2008). Therefore, their grades are lower, they perform poorly on standardized tests, and they are more likely to be retained or placed in special education and/or drop out of school (Loe & Feldman, 2007). The culmination of the deficits in attention and lack of development of scholastic skills may be the reason that approximately 20-30% of chil-

dren with ADHD are also diagnosed with a specific learning disability (DuPaul et al., 2008). That is, ADHD and learning disabilities often coexist as ADHD serves as a risk factor for learning disabilities. Moreover, the behaviors associated with ADHD (e.g., inattention, hyperactivity, impulsivity) often exacerbate learning difficulties in school.

### Differential Diagnosis of ADHD

In considering a differential diagnosis of ADHD and a learning disability, there are a few signposts that school counselors should consider. First, children with ADHD underachieve because of their difficulty attending in the classroom, low rates of academic engagement, and inconsistent work completion (DuPaul et al., 2008). However, children with a learning disability do not learn in school because they have a specific deficit in their ability to learn, and evidence a significant discrepancy between academic performance and overall cognitive ability. Second, children with a learning disability typically demonstrate problems solely in the school setting, and the problematic behaviors they display are the result of frustration they experience in specific academic subjects. Notably, their behavior is not impaired in other settings. This is in direct contrast to children with a diagnosis of ADHD, whose behaviors are pervasive, exhibited in both the home and school environments, and impair academic and social functioning (Barkley, 2003). In differentiating the symptoms of ADHD with other mental health disorders, the authors have noted that similar symptoms of inattention have been found in children who have mental retardation. Symptoms of oppositional defiant disorder should also be differentiated with ADHD, although many children are diagnosed with both. ADHD should not be accounted for by other mental disorders such as anxiety, depression, or personality disorders, which are more relevant to adult comorbidity (American Psychiatric Association [APA], 2013). Distinguishing between disorders is important

because evidence-based interventions will differ based on the disorder and will not be effective for the student if misdiagnosed.

### Social Difficulties

Socially, children and adolescents with ADHD evidence a wide range of problem behaviors, including inattention, hostility, argumentativeness, and stubbornness, and they tend to be loud, intense, and socially awkward and insensitive (Nijmeijer et al., 2008). The deficits in interpersonal skills and prosocial behaviors often result in social difficulties and poor quality friendships. For instance, they often have difficulty with the natural give-and-take of relationships (Hoza, 2007) and struggle to regulate their emotions and behaviors (Kats-Gold, Besser, & Priel, 2007). Given the social difficulties that children with ADHD experience, they tend to have few friends,

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are rejected and less accepted by their peers, and have a great deal of conflict with parents and siblings (Kats-Gold et al., 2007). The negative social implications experienced by children with ADHD often result in social isolation for these children. Consequently, they tend to be less resilient and are more likely to associate with peers who have similar adjustment problems (Howard & Landau, 2010).

### Health-Related Problems

With respect to health-related issues, children with ADHD are more likely to experience accidental injuries, such as broken bones, lacerations, burns, head injuries, severe bruises,

or poisonings. This is likely due to their impulsive behaviors and lack of planning and precaution (Barkley, 2006; Brehaut, Miller, Raina, & McGrail, 2003). Further, they are at greater risk for motor vehicle accidents (Jerome, Habinski, & Segal, 2006) and risk-taking behaviors such as experimentation with alcohol and drugs (Molina et al., 2007), cigarette smoking, and engaging in dangerous sexual behaviors (Burke, Loeber, & Lahey, 2001).

## ETIOLOGY

Although no professional consensus exists about the cause of ADHD, genetic and neurobiological factors have been implicated in its development while biological and environmental risk factors influence how ADHD is expressed. Both the National Insti-

tute of Health (NIH; 2012) and the National Resource Center on ADHD (2012) have speculated that genetics may be a contributing factor in the development of ADHD. Research has suggested that ADHD runs in families and that children born to parents who themselves have been diagnosed with ADHD have as high as a 60% chance of having ADHD (Waldman & Gizer, 2006). Although genetics may predispose a child to the development of ADHD, extant biological and environmental factors may exacerbate the disorder. Such factors include maternal smoking (Altink et al., 2009), maternal stress (Grizenko et al., 2012), lead exposure (Nigg,

Nikolas, Knottnerus, Cavanagh, & Friderici, 2010), and effects of father-child and mother-child interactions (Keown, 2012).

## EVIDENCE-BASED INTERVENTIONS

In light of the previously mentioned effects of ADHD on children's academic, social, and behavioral functioning, several approaches have been employed to support children with ADHD. These approaches include psychostimulant medication, nutrition and diet, play therapy, and behavioral interventions. Although there is no known cure for ADHD, treatment has been shown to improve the associated characteristics of the disorder (NIH, 2012).

The most common medications prescribed for children diagnosed with ADHD are stimulants (NIMH, 2013). Some of the more popular stimulants prescribed are Concerta, Adderall, Ritalin, Dexedrine, and Focalin (U.S. Food & Drug Administration, 2010). These medications have been found to reduce hyperactivity and impulsivity as well as increase the child's ability to focus. Despite the benefits of ADHD medications, children taking

ADHD as the stimulant medications mentioned above (PubMed Health, 2011). Medication may not ameliorate all behaviors associated with ADHD and children may continue to experience difficulty at school, home, and in the community (Children and Adults with Attention-Deficit/Hyperactivity Disorder [CHADD], 2012).

Given the many side effects that medications may have, families should think carefully about medication as a treatment for ADHD. In fact, satisfaction with ADHD medications has been known to influence the assessment of treatment outcome (Gortez-Dorten, Breuer, Hautmann, Rothenberger, & Dopfner, 2011). Therefore, parents' perception of the effects of medication on their children may determine how they evaluate the effectiveness of these medications on the functionality of their children. Considering the reported side effects of ADHD medications, parents need to be supported in making informed decisions about beginning and maintaining their children on these medications. In a study exploring the knowledge, attitude, and information sources of 126 parents of children diagnosed with ADHD using stimulant medication, Stroh, Frankenberg, Cornwell-Swanson, Wood, and Pahl (2008) reported that a significant

In terms of further treatment for ADHD, researchers have explored the impact of nutrition on children's functioning. For example, dietary modification has been associated with decrease in sleep difficulties in children afflicted by the symptoms of ADHD. Pelsser, Frankena, Buitelaar, and Rommelse (2010) found significant improvements in sleep patterns when children instituted an elimination diet consisting of only hypoallergenic foods such as turkey, rice, vegetables, pears, and water. Kanarek (2011) discussed controversy surrounding the elimination diet and suggested that studies such as those eliminating foods containing food additives or dyes to potentially reduce symptoms of ADHD were questionable. Although positive results such as decrease in hyperactive behaviors was found when these ingredients (e.g., food additives and food dyes) were eliminated from the diet, Kanarak questioned the potential influence of other variables such as minerals and vitamins. This concern was echoed by Sinn (2011), who suggested that continued research be conducted in order to present more concrete information on the effects of food coloring and additives on children diagnosed with ADHD. However, Sinn also suggested that supplements with components such as zinc, magnesium, and iron may very well be advantageous in countering some of the effects of ADHD. Thus, although nutrition and diet play positive roles in decreasing symptoms of ADHD, exploration needs to continue to determine the extent of support that nutrition and diet can provide.

Apart from pharmaceutical and nutritional approaches in supporting children diagnosed with ADHD, counseling interventions also have been utilized. For example, play therapy is one noted therapeutic approach that has been shown to be effective in the treatment of childhood ADHD. The Association for Play Therapy (APT; 2012, para. 2) defines play therapy as "the systematic use of a theoretical model to establish an interpersonal process wherein trained play thera-

## CONSIDERING THE REPORTED SIDE EFFECTS OF ADHD MEDICATIONS, PARENTS NEED TO BE SUPPORTED IN MAKING INFORMED DECISIONS ABOUT BEGINNING AND MAINTAINING THEIR CHILDREN ON THESE MEDICATIONS.

them may experience several adverse side effects, such as decreased appetite, anxiety, irritability, and sleep difficulties (Weiss & Salpekar, 2010). The U.S. Food and Drug Administration has recently approved Strattera, a non-stimulant medication also known to have side effects such as decreased appetite and trouble sleeping. However, Strattera has been found to be as effective in reducing the symptoms of

number of these parents were misinformed. In fact, although the children of these parents were taking ADHD medication, parents had inaccurate information about the medications and were greatly misinformed about these drugs. Parental misinformation points to the necessity of providing parents with accurate information and informational sources to fully understand the treatment of their children.

pists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development.” Play therapy is a fun way of allowing children to learn adaptive behaviors to expand self-expression, self-knowledge, self-actualization and self-efficacy (Schottelkorb & Ray, 2009). For example, Portrie-Bethke, Hill, and Bethke (2009) explored the benefits of an integrative model of adventure therapy and Adlerian play therapy and reported a strength-based and creative approach to meeting the needs of children diagnosed with ADHD. This approach focuses strongly on relationship building between counselor and client, family dynamics, behavioral awareness, and skill building. According to Portrie-Bethke and colleagues, the tenets of this integrative approach empower children to control their impulsivity and learn new ways to build more positive social relationships.

Similarly, Schottelkorb and Ray (2009) observed the effectiveness of client-centered play therapy with children diagnosed with ADHD and determined a positive reduction in ADHD symptoms. Through techniques such as tracking, reflecting content and feelings, facilitating creativity, and enhancing the meaning of play, the researchers found an increase in on-task behaviors even after the play therapy meetings had ended. In this instance, child-centered play therapy gave positive indications of its usefulness in working with children diagnosed with ADHD. These studies and others presented in the literature promoted play therapy as an effective approach for supporting children diagnosed with ADHD in resolving psychosocial difficulties and enhancing growth and development in the academic and social setting.

With respect to behavioral interventions, cognitive self-instructional training has been shown to assist with processing one’s thoughts into adaptive, appropriate behaviors. This model has been adapted to support students with impulsivity difficulties (Meichenbaum & Goodman, 1977). Cognitive be-

havioral interventions allow children the opportunity to learn to modify their thoughts and behaviors, thus decreasing the behavioral difficulties that children with ADHD experience. For instance, cognitive behavior therapy was used in a case study with a student diagnosed with ADHD who was experiencing significant lack of self-control. The researchers, Levine and Anshel (2011), found that when using a token system, parental involvement, positive coping examples, humor, and role-play, significant improvement in behavioral outcomes was noted. Furthermore, the student showed a decrease in classroom disruptive behaviors and an increase in classroom participation. Similar results were reported by Shillingford, Lambie, and Walter (2007), whose integrated approach focused on students diagnosed with ADHD. The researchers determined that an amalgamation of cognitive behavioral techniques (e.g., cognitive restructuring, homework)

gies and interventions that school personnel may employ in the school setting to support and promote positive academic, social, and behavioral functioning for children with ADHD.

## STRATEGIES AND INTERVENTIONS FOR CHILDREN WITH ADHD IN THE CLASSROOM

That ADHD negatively impacts academic performance and social and emotional functioning is well established (Lee, Lahey, Owens, & Hinshaw, 2008). Given the negative consequences of ADHD, effective school-based interventions are warranted. School personnel are uniquely positioned to implement

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and family systems was successful in allowing more positive behavioral functioning such as remaining on-task, developing positive friendships, and promoting more functional family relationships. Therefore, a cognitive behavioral approach appears to have potential for being a key contributor to improvements in academic and social functioning of students diagnosed with ADHD. However, despite the benefits of cognitive behavioral interventions, Evans (2007) suggested the combined use of stimulant medication and behavior intervention to support children with the symptoms of ADHD. The following section describes strate-

gies for children with ADHD to maximize their capacity for learning. However, intervention efforts are most effective when they are implemented both at home and at school. School counselors are ideally positioned to coordinate between teachers and parents to provide support for students diagnosed with ADHD. In fact, the American School Counselor Association’s (ASCA, 2010) position statement supports the involvement of school counselors in creating, leading, facilitating, and evaluating school and home partnerships in order to procure more collaborative relationships. As such, continued communication and

progress monitoring of interventions is integral to optimal success for children with ADHD. This collaborative effort can begin with school counselors working with teachers to develop and implement interventions to assist students in reducing the symptoms of ADHD. Teachers can be trained to employ the following strategies in the classroom.

### **Classroom Strategies**

Several evidence-based classroom management strategies may help a student be successful in school. Perhaps most important is maximizing structure and predictability. Classrooms that are highly structured promote increased concentration, friendly and helpful behaviors, and enhance social interactions with peers (Simonsen, Fairbanks, Briesch, & Myers, 2008). Within the classroom, children with ADHD will benefit from a consistent schedule. A predictable routine lets children know what is expected of them and develops stability (Brock, Bethany, & Searls, 2010). Teachers may establish a routine by maintaining a clearly posted list of classroom rules, expectations, and consequences for behaviors. Rules

ADHD, teachers may need to repeat instructions several times (Brock, Bethany, & Searls, 2010).

Environmental changes within the classroom may be helpful in circumventing distractibility issues that children with ADHD experience. Research has suggested that the physical arrangement of a classroom should minimize distractions (Shillingford, Lambie, & Walter, 2007) and crowding (Maxwell, 1996). Teachers may address distractions by incorporating walls and/or dividers within the room and minimize crowding by increasing the amount of open space, which facilitates students' interactions with teachers and peers (Simonsen, Fairbanks, Briesch, & Myers, 2008). Preferential seating close to the teacher's desk and frequent breaks to improve on-task behavior (Pffifner, Barkley, & DuPaul, 2006) may also help children with ADHD. Another evidence-based classroom strategy that has been shown to enhance overall student behavior is active supervision, whereby the teacher moves around the classroom, interacts with students, and monitors behavior, correcting inappropriate behavior and reinforcing ap-

academic engagement in the classroom by increasing opportunities to respond and engaging the class in observable ways, such as choral responding and response cards (Greenwood, Horton, & Utley, 2002; Simonsen, Fairbanks, Briesch, & Myers, 2008). These strategies have been found to increase academic achievement (Christle & Schuster, 2003) and improve behavior (Godfrey, Grisham-Brown, & Schuster, 2003). The teacher may also provide academic accommodations such as breaking assignments into smaller and more manageable tasks, providing students with shorter assignments, allowing more time to complete tasks, and writing assignments on the board (Brock, Bethany, & Searls, 2010; Pffifner, Barkley, & DuPaul, 2006). In addition to these modifications, it is important that teachers match the difficulty of an assignment to the child's skill level. Since children with ADHD have a low tolerance for frustration, appropriately matching an assignment to meet the academic skill level diminishes the likelihood that children with ADHD will give up quickly because a task is too difficult for them. By teachers incorporating modifications such as these, children with ADHD are more likely to complete their work (Brock, Bethany, & Searls, 2010). Students with ADHD also evidence more on-task behavior in the morning than in the afternoon. Therefore, researchers have recommended that academic instruction be provided in the morning, reserving nonacademic instruction for later in the day (Brock, Bethany, & Searls, 2010).

## **TEACHERS MAY INCREASE STUDENTS' ACADEMIC ENGAGEMENT IN THE CLASSROOM BY INCREASING OPPORTUNITIES TO RESPOND AND ENGAGING THE CLASS IN OBSERVABLE WAYS, SUCH AS CHORAL RESPONDING AND RESPONSE CARDS**

should be clear and brief with visual reminders for appropriate behaviors (Simonsen, Fairbanks, Briesch, & Myers, 2008). In order to be maximally effective, rules should be taught to students, reviewed on a regular basis, and feedback on expectations should be provided (Colvin, Sugai, Good, & Lee, 1997). Similarly, instructions should also be specific and direct, with students paraphrasing directions in order to ensure understanding. Since inattention is a core symptom of

appropriate classroom behavior (De Pry & Sugai, 2002). Finally, planning and anticipation of changes in routine or difficult situations is important so as to make appropriate accommodations for the child and reduce the likelihood of behavioral problems (Brock, Bethany, & Searls, 2010).

School counselors can coordinate several other strategies with classroom teachers to help students with ADHD succeed academically. Specifically, teachers may increase students'

### **Behavioral Strategies**

Contingency management, which combines positive reinforcement for desired behaviors with punishment to reduce inappropriate behaviors, has been found to be effective for children with ADHD. Effective school-based interventions begin with structured classroom management that typically employs consequences for behavior. Incorporating both positive and negative consequences in the classroom is important for children with ADHD.

When considering the contingencies for reinforcement and punishment, teachers and school counselors should note that consequences need to be more powerful for children with ADHD, need to be delivered more frequently, and need to be immediate. Particularly important is that the rewards need to be changed regularly so that they do not lose their reinforcing power (Pffnner, Barkley, & DuPaul, 2006). Moreover, for any behavior management plan to work, involving students in the creation of the menu of possible rewards is critical. The reason for this is that different rewards will be reinforcing for different students and what adults may believe to be rewarding for students may be different from what a particular student finds reinforcing. Thus, effective reinforcers vary from student to student and school counselors may assist teachers by brainstorming school-based rewards that the teacher can use with students with ADHD. Although both positive and negative consequences are important in modifying behavior in children with ADHD, positive reinforcement in the form of positive and powerful rewards, should initially be provided in order to reinforce the desired behavior (Brock, Bethany, & Searls, 2010).

Token economy systems, in which positive and negative reinforcement are combined, serve as an effective classroom behavior management strategy for children with ADHD. This behavioral technique provides tokens for behaving appropriately. Students may redeem tokens for pre-determined privileges or rewards. This type of behavior management program is considered to be efficient in that the teacher or counselor can immediately reinforce the desired behavior at any point during the school day. Further, he or she may take tokens away if students engage in inappropriate behavior (Brock, Bethany, & Searls, 2010; Pffnner, Barkley, & DuPaul, 2006).

Response-cost procedures and timeout both serve as behavior modification techniques. A response-cost program involves losing privileges, tokens, or activities for engaging in undesirable

behavior. Thus, a student may begin with a certain number of points/tokens, and each time the student demonstrates an undesired behavior, they lose points/tokens. Implementing such a system requires planning and communication with the student (DuPaul et al., 2008). In particular, the student should understand how a response-cost contingency will work, when it will be implemented, what the cost will be (i.e., how many tokens/points will be lost for each instance of evidencing undesirable behavior), the possible reinforcers available and the points/tokens needed to earn rewards, and when he or she may redeem points/tokens for rewards. Response-cost procedures may be used as the sole method of behavior management or as a component of another contingency program, such as a token economy (Brock, Bethany, & Searls, 2010; Pffnner, Barkley, & DuPaul, 2006).

**CONSEQUENCES NEED TO BE MORE POWERFUL FOR CHILDREN WITH ADHD, NEED TO BE DELIVERED MORE FREQUENTLY, AND NEED TO BE IMMEDIATE. PARTICULARLY IMPORTANT IS THAT THE REWARDS NEED TO BE CHANGED REGULARLY SO THAT THEY DO NOT LOSE THEIR REINFORCING POWER.**

In timeout, children who display disruptive classroom behavior are removed from the setting in which they engaged in the inappropriate behavior so that they no longer receive attention for the undesirable behavior. It involves removing a child from the reinforcing activity where they were demonstrating problematic behavior to a quiet, boring place, for a specified period of time. Timeout should be administered immediately following the undesired behavior and the teacher/counselor should remain calm but firm. The heuristic for the length of time is 1 minute for each year of age (DuPaul et al., 2008). Therefore, if a child is 5 years old, timeout should last a total of 5 minutes. The student

in timeout should be supervised at all times (Brock, Bethany, & Searls, 2010; Pffnner, Barkley, & DuPaul, 2006).

As mentioned previously, for an intervention to be optimally effective, home and school collaboration should be in place. A home-school log or daily report card may facilitate consistency in practice between both settings. That is, when the child's progress and performance are shared with the parents, and positive or negative consequences are provided based on that day's performance, the likelihood is greater that children with ADHD will strive to modify their behavior (DuPaul et al., 2008).

In selecting a behavioral management plan, school counselors and teachers should remember that students may display similar behaviors for different reasons, which is why determining the function of a behav-

ior is critical in order to develop an effective management strategy. Some children diagnosed with ADHD may benefit from verbal reprimand, while others may require a more commanding consequence. The student who is inattentive and often caught daydreaming may require verbal reminders to stay on task. On the other hand, the student who is more impulsive may require a timeout session. Thus, each behavior plan should be individually tailored to the unique needs of the student. To help the teacher respond more effectively to the problematic behaviors evidenced by children with ADHD, school counselors can facilitate and participate in the development of a functional behavioral assess-

ment (FBA). An FBA is a method of problem-solving in which the goal is to identify the purpose of a behavior and environmental factors that maintain the behavior, and design interventions to address the behavior (DuPaul et al., 2008). The FBA should be completed as part of a team effort, including the participation of the student and individuals who work with him or her (counselors, teachers, paraprofessionals, coaches, etc.). Information for the FBA may be obtained by reviewing student records (grades, attendance, previous testing, disciplinary actions, medical issues, social history, prior interventions), interviewing parents and teachers, and observing the student in different classes, with different teachers, and at different times during the school day (Steege & Watson, 2009). Once the data are collected, work can begin on determining what factors maintain the behavior(s) and what situations or events trigger those behaviors (DuPaul & Stoner, 2003). Thus, determining the function of the behavior is essential in developing a successful intervention. Behavior may serve various functions, including (a) obtaining positive or negative attention from others; (b) obtaining access to desired objects or activities; (c) producing sensory effects, such as feeling good or relieving pain; and (d) avoiding/escaping undesirable events, people, or activities. For example, if a student demonstrated out-of-seat behavior to obtain attention from peers, the intervention that is designed would be different than one for a student who was out-of-seat during reading to avoid work-related activities for this academic subject. This information will assist the school counselor and collaborative team in developing an appropriate behavior intervention plan (BIP) that addresses the student's individual needs (DuPaul et al., 2008).

## SUMMARY

ADHD is a serious behavior disorder that negatively affects a child's academic and social functioning. Given the

complexities of ADHD, school-based intervention efforts are important to a child's success. Therefore, equipping school personnel with the skills and strategies to support students is imperative. School counselors have the knowledge and training to not only assist students with ADHD, but also to provide teachers with strategies to support students in their classrooms. In this manner, school counselors may make a difference in the lives of children diagnosed with ADHD. ■

## REFERENCES

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.
- American School Counselor Association. (2010). *ASCA position statement: The professional school counselor and school-family-community partnerships*. Retrieved from <http://www.schoolcounselor.org/files/Partnerships.pdf>
- Association for Play Therapy. (2012). *Play therapy makes a difference!* Retrieved from <http://www.a4pt.org/ps.playtherapy.cfm?ID=1653>
- Altink, M. E., Slaats-Willemse, D. I. E., Rommelse, N. N. J., Buschgens, C. J. M., Fliers, E. A., Arias-Vaásquez, A.,... Buitelaar, J. K. (2009). Effects of maternal and paternal smoking on attentional control in children with and without ADHD. *European Child & Adolescent Psychiatry, 18*(8), 465-475. doi:10.1007/s00787-009-0001-3
- Barkley, R. A. (2003). Attention-deficit/hyperactivity disorder. In E. J. Mash & R. A. Barkley (Eds.), *Child Psychopathology* (pp. 75-143). New York, NY: The Guilford Press.
- Barkley, R. A. (2006). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed). New York, NY: Guilford Press.
- Brehaut, J. C., Miller, A., Raina, P., & McGrail, K. M. (2003). Childhood behavior disorders and injuries among children and youth. *Pediatrics, 111*, 262-269.
- Brock, S. E., Bethany, B. G., & Searls, M. (2010). ADHD: Classroom interventions. In A. Canter, S. Carroll, L. Paige, & I. Romero (Eds.), *Helping children at home and school III: Handouts from your school psychologist* (pp. S8H5-S8H5-5). Silver Spring, MD: National Association of School Psychologists.
- Brown, T. E. (2000). Emerging understandings of attention-deficit disorders and comorbidities. In T. E. Brown (Ed.), *Attention-deficit disorders and comorbidities in children, adolescents, and adults* (pp. 3-55). Washington, DC: American Psychiatric Press.
- Burke, J. D., Loeber, R., & Lahey, B. B. (2001). Which aspects of ADHD are associated with tobacco use in early adolescence? *Journal of Child Psychology and Psychiatry, 42*, 493-502. doi:10.1111/1469-7610.00743
- Campbell, S. B. (2002). *Behavior problems in preschool children: Clinical and developmental issues* (2nd ed.). New York, NY: Guilford Press.
- Centers for Disease Control and Prevention. (2010). Attention-deficit/hyperactivity disorder (ADHD): Facts about ADHD. Retrieved from <http://www.cdc.gov/ncbddd/adhd/facts.html>
- Children and Adults with Attention Deficit/Hyperactivity Disorder (2012). *Understanding ADHD*. Retrieved from <http://www.chadd.org/Understanding-ADHD.aspx>
- Christle, C. A., & Schuster, J. W. (2003). The effects of using response cards on student participation, academic achievement, and on-task behavior during whole-class math instruction. *Journal of Behavioral Education, 12*, 147-165.
- Colvin, G., Sugai, G., Good, R. H., III, & Lee, Y.-Y. (1997). Using active supervision and precorrection to improve transition behaviors in an elementary school. *School Psychology Quarterly, 12*, 344-361. doi:10.1037/h0088967
- De Pry, R. L., & Sugai, G. (2002). The effect of active supervision and pre-correction on minor behavioral incidents in a sixth grade general education classroom. *Journal of Behavioral Education, 11*, 255-264. doi:1053-0819/02/1200-0255/0
- DuPaul, G. J., & Stoner, G. (2003). *ADHD in the schools: Assessment and intervention strategies* (2nd ed.). New York, NY: Guilford Press.
- DuPaul, G. J., Stoner, G., & O'Reilly, M. J. (2008). Best practices in classroom interventions for attention problems. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (Vol. 4, pp. 1421-1437). Silver Spring, MD: National Association of School Psychologists.



- Evans, S. (2007). *An investigation of the effects of behavioral and pharmacological interventions on the academic performance of students with ADHD* (Doctoral dissertation). Retrieved from [http://kuscholarworks.ku.edu/dspace/bitstream/1808/3975/1/umi-ku-2221\\_1.pdf](http://kuscholarworks.ku.edu/dspace/bitstream/1808/3975/1/umi-ku-2221_1.pdf)
- Godfrey, S. A., Grisham-Brown, J., & Schuster, J. W. (2003). The effects of three techniques on student participation with preschool children with attending problems. *Education and Treatment of Children, 26*, 255-272.
- Gortez-Dorten, A., Breuer, D., Hautmann, C., Rothenberger, A., & Dopfner, M. (2011). What contributes to patient and parents' satisfaction with medication in the treatment of children with ADHD? A report on the development of a new rating scale. *European Child & Adolescent Psychiatry, 20*, 297-307. doi:10.1007/s00787-011-0207-z
- Greenhill, L. L., Posner, K., Vaughan, B. S., & Kratochvil, C. J. (2008). Attention deficit hyperactivity disorder in preschool children. *Child and Adolescent Psychiatric Clinics of North America, 35*, 571-578.
- Greenwood, C. R., Horton, B. T., & Utley, C. A. (2002). Academic engagement: Current perspectives in research and practice. *School Psychology Review, 31*, 328-349.
- Grizenko, N., Fortier, M., Zadorozny, C., Thakur, G., Schmitz, N., Duval, R., & Joobar, R. (2012). Maternal stress during pregnancy, ADHD symptomology in children and genotype: Gene-environment interaction. *Journal of the Canadian Academy of Child & Adolescent Psychiatry, 2*, 9-15.
- Howard, A. M., & Landau, S. (2010). ADHD: A primer for parents and educators. In A. Canter, S. Carroll, L. Paige, & I. Romero (Eds.), *Helping children at home and school III: Handouts from your school psychologist* (pp. S8H41—S8H41-5). Silver Spring, MD: National Association of School Psychologists.
- Hoza, B. (2007). Peer functioning in children with ADHD. *Journal of Pediatric Psychology, 32*, 655-663. doi:10.1093/jpepsy/jsm024
- Jerome, L., Habinski, L., & Segal, A. (2006). Attention-deficit/hyperactivity disorder (ADHD) and driving risk: A review of the literature and a methodological critique. *Current Psychiatric Reports, 8*, 416-426.
- Kanarek, R. B. (2011). *Artificial food dyes and attention deficit hyperactivity disorder*. *Nutrition Reviews, 69*(7), 385-391. doi:10.1111/j.1753-4887.2011.00385.x
- Kats-Gold, I., Besser, A., & Priel, B. (2007). The role of simple emotion recognition skills among school aged boys at risk of ADHD. *Journal of Abnormal Child Psychology, 35*, 363-378. doi:10.1007/s10802-006-9096-x
- Keown, L. (2012). Predictors of boys' ADHD symptoms from early to middle childhood: The role of father-child and mother-child interactions. *Journal of Abnormal Child Psychology, 40*(4), 569-581. doi:10.1007/s10802-011-9586-3
- Lee, S. S., Lahey, B. B., Owens, E. B., & Hinshaw, S. P. (2008). Few preschool boys and girls with ADHD are well-adjusted during adolescence. *Journal of Abnormal Child Psychology, 36*, 373-383. doi:10.1007/s10802-007-9184-6
- Levine, E. S., Anshel, D. J. (2011). "Nothing works!" A case study using cognitive-behavior interventions to engage parents, educators, and children in the management of attention-deficit/hyperactivity disorder. *Psychology in the Schools, 48*(3), 297-306. doi:10.1002/pits.20554
- Loe, I. M., & Feldman, H. M. (2007). Academic and educational outcomes of children with ADHD. *Journal of Pediatric Psychology, 32*, 643-654. doi:10.1093/jpepsy/jsi054
- Martel, M. M., Nikolas, M., & Nigg, J. T. (2007). Executive function in adolescents with ADHD. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 1437-1444. doi:10.1097/chi.0b013e31814cf953
- Maxwell, L. E. (1996). Multiple effects of home and daycare crowding. *Environment and Behavior, 28*, 494-511. doi:10.1177/0013916596284004
- Meichenbaum, D., & Goodman, J. (1977). Training impulsive children to talk to themselves: A means of developing self-control. *Journal of Abnormal Psychology, 77*, 115-126.
- Molina, B. S. G., Flory, K., Hinshaw, S. P., Greiner, A. R., Arnold, L. E., Swanson, J. M., ... Wigal, T. (2007). Delinquent behavior and emerging substance use in the MTA at 36 months: Prevalence, course, and treatment effects. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 1028-1040. doi:10.1097/chi.0b013e3180686d96
- National Institute of Health: National Human Genome Research Institute. (2012). *The ADHD Genetic Research Study at the National Institutes of Health and The National Human Genome Research Institute*. Retrieved from <http://www.genome.gov/10004297>
- National Institute of Mental Health. (2013). *Attention deficit hyperactivity disorder (ADHD)*. Retrieved from <http://www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder/complete-index.shtml#pub6>.
- National Resource Center on ADHD. (2012). *About ADHD: Causes and brain chemistry*. Retrieved from <http://www.help4adhd.org/en/about/causes>
- Nigg, J. T., Nikolas, M., Knottnerus, G. M., Cavanagh, K., & Friderici, K. (2010). Confirmation and extension of association of blood lead with attention-deficit/hyperactivity disorder (ADHD) and ADHD symptom domains at population-typical exposure levels. *Journal of Child Psychology & Psychiatry, 51*, 58-65. doi:11/j.1469-7610.2009.02135.x
- Nijmeijer, J. S., Minderaa, R. B., Buitelaar, J. K., Mulligan, A., Hartman, C. A., & Hoekstra, P. J. (2008). Attention-deficit/hyperactivity disorder and social dysfunctioning. *Clinical Psychology Review, 28*, 692-708. doi:10.1016/j.cpr.2007.10.003
- Pelsser, L. M., Frankena, K., Buitelaar, J. K., & Rommelse, N. N. (2010). Effects of food on physical and sleep complaints in children with ADHD: A randomized controlled pilot study. *European Journal of Pediatrics, 169*, 1129-1138. doi:10.1007/s00431-010-1196-5
- Pfiffner, L. J., Barkley, R. A., & DuPaul, G. J. (2006). Treatment of ADHD in school settings. In R. A. Barkley (Ed.), *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 547-589). New York, NY: Guilford Press.
- Portrie-Bethke, T., Hill, N., & Bethke, J. (2009). Strength-based mental health counseling for children with ADHD: An integrative model of adventure-based counseling and Adlerian play therapy. *Journal of Mental Health Counseling, 31*(4), 323-339
- PubMed Health. (2011). *Attention deficit hyperactivity disorder: Medications*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002518/>
- Schottelkorb, A. A., & Ray, D. C. (2009). ADHD symptom reduction in elementary students: A single-case effectiveness design. *Professional School Counseling, 13*(1), 11-22.
- Shillingford, M. A., Lambie, G. W., & Walter, S. M. (2007). An integrative cognitive-behavioral, systemic approach to working with students diagnosed with attention deficit hyperactivity disorder. *Professional School Counseling, 11*(2), 105-112

- Simonsen, B., Fairbanks, S., Briesch, A., & Myers, D. (2008). Evidence-based practices in classroom management: Considerations for practice. *Education and Treatment of Children, 31*, 351-380.
- Spencer, T. J., Biederman, J., & Mick, E. (2007). Attention-deficit/hyperactivity disorder: Diagnosis, lifespan, comorbidities, and neurobiology. *Journal of Pediatric Psychiatry, 32*, 631-642. doi:10.1093/jpepsy/jsm005
- Steege, M. W., & Watson, T. S. (2009). *Conducting school-based functional behavioral assessments: A practitioner's guide* (2nd ed.). New York, NY: Guilford Press.
- Stroh, J., Frankenberger, W., Cornell-Swanson, L., Wood, C., & Pahl, S. (2008). The use of medication and behavior interventions for the treatment of attention deficit hyperactivity disorder: A survey of parents' knowledge, attitude, and experiences. *Journal of Child & Family Studies, 17*, 385- 401. doi:10.1007/s10826-007-9149-y
- U.S. Department of Health & Human Services (2011). *HHS healthbeat: Wort and ADHD*. Retrieved from <http://www.hhs.gov/news/healthbeat/2008/07/20080715a.html>
- U.S. Food & Drug Administration (2010). *FDA asks attention-deficit hyperactivity disorder (ADHD) drug manufacturers to develop patient medication guides*. Retrieved from <http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm107918.htm>
- Waldman, I. D., & Gizer, I. R. (2006). The genetics of attention deficit hyperactivity disorder. *Clinical Psychology Review, 26*, 396-432. doi:10.1016/j.cpr.2006.01.007
- Weiss, M. D. & Salpekar, J. (2010). Sleep problems in the child with attention deficit hyperactivity disorder: Defining aetiology and appropriate treatments. *CNS Drugs, 24*, 811- 828

