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Fall 1997

Students with Attention Deficit/Hyperactivity Disorder

The following is a section of the *Nineteenth Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act (IDEA)*. The full text of the material is presented; the tables are shown at the end.

IN RECENT YEARS, much emphasis has been placed on the proper diagnosis and treatment of students with attention deficit/hyperactivity disorder (ADHD). The American Psychiatric Association (APA) (1994) estimates that children with attention deficit/hyperactivity disorder comprise between 3 and 5 percent of the school-age population nationally, though many of these children may not require special education.

Providing effective programs to educate students with attention deficit/hyperactivity disorder poses a unique set of challenges -- for families and teachers alike. Many children with attention deficit/hyperactivity disorder have difficulty learning to read (Dykman, Ackerman, & Raney, 1994). Other academic subjects that children with this disorder may find difficult include (1) mathematics (Cantwell & Baker, 1991), (2) written communication (Anderson et al., 1987), and (3) spelling (Zentall, 1993). In addition, children with attention deficit/hyperactivity disorder often have difficulty developing age-appropriate social skills. For example, many children have low levels of self-esteem (Barkley, 1990); are easily frustrated, especially when faced with novel or challenging tasks (DuPaul, 1991); and have difficulty establishing friendships with other children (Swanson, 1992).

Given these challenges, this module will discuss several important issues related to the education of school-aged students with attention deficit/hyperactivity disorder. These issues include:

- What is attention deficit/hyperactivity disorder?
- How should students with attention deficit/hyperactivity disorder be identified?
- What are the legal rights of students with attention deficit/hyperactivity disorder? and
- What are effective treatments for students with attention deficit/hyperactivity disorder?

WHAT IS ATTENTION DEFICIT/HYPERACTIVITY DISORDER?

Children with attention deficit/hyperactivity disorder share common clinical syndromes associated with problems of inattention, hyperactivity, and impulsivity (Shaywitz & Shaywitz, 1988). In addition, many children with attention deficit/hyperactivity disorder experience co-occurring disabilities, such as specific learning disabilities or serious emotional disturbance (Forness et al., 1992).

Clinical descriptions of children with attention deficit/hyperactivity disorder symptoms have existed in the research literature for almost 100 years. For example, Still (1902), perhaps the first clinician to report the disorder, described a group of 20 children who exhibited aggressive, impulsive, and defiant behaviors. Other researchers, such as Ebaugh (1923) and Stryker (1925), described children who exhibited difficulty maintaining attention, regulating their own activity levels, and controlling impulsive behavior. Today, these three symptoms continue to be the key distinguishing characteristics of children with attention deficit/hyperactivity disorder (McKinney, Montague, & Hocutt, 1994).

Over the past 50 years, there has been some change in the terminology used to label children with attention deficit/hyperactivity disorder -- although the major symptoms associated with the disorder have remained constant. For example, these children were often identified as having "minimal brain damage" (e.g., Strauss & Lehtinen, 1947) in the 1940s, while the term "hyperactive child syndrome" (e.g., Chess, 1960) was more common in the 1950s and 1960s. The APA initially defined attention deficit disorder as "hyperkinetic reaction syndrome," in 1968, and renamed the disorder as "attention deficit disorder" in 1980. The APA introduced the term attention deficit/hyperactivity disorder in 1987.

The *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition* (DSM-IV), published by the APA in 1994, contains the most commonly accepted clinical definition of attention deficit/hyperactivity disorder. (See table 1 at the end of this paper.) According to the DSM-IV, a child's attention deficit/hyperactivity disorder symptoms must meet several criteria, including:

- Severity. The child's attention deficit/hyperactivity disorder symptoms must be more frequent and severe than is typical of other children at similar developmental levels;
- Early Onset. At least some of the child's attention deficit/hyperactivity disorder symptoms must have begun before 7 years of age; and
- Duration. The child's attention deficit/hyperactivity disorder symptoms must have persisted for at least six months prior to the diagnosis.

The DSM-IV categorizes a child's attention deficit/hyperactivity disorder symptoms within two general categories: (1) inattentive behaviors, such as making careless mistakes or being very disorganized, and (2) hyperactive/impulsive behaviors, such as excessively fidgeting or interrupting others. These two categories yield three main types of attention deficit/hyperactivity disorder:

- Attention Deficit/Hyperactivity Disorder -- Predominantly Inattentive Type. The child exhibits at least six of the nine symptoms for inattention but does not meet the hyperactivity-impulsivity criteria.

- Attention Deficit/Hyperactivity Disorder -- Predominantly Hyperactive-Impulsive Type. The child exhibits at least six of the nine symptoms for hyperactivity-impulsivity but does not meet the criteria for inattention.
- Attention Deficit/Hyperactivity Disorder -- Combined Type. The child exhibits at least six of the nine symptoms for both inattention and hyperactivity-impulsivity.

The DSM-IV manual advises clinicians to use evidence of the child's behavior over the six months prior to his or her diagnosis to confirm which of these three syndromes is most applicable. However, according to the APA, most children with attention deficit/hyperactivity disorder are likely to meet the criteria for the attention deficit/hyperactivity disorder-combined type.

HOW SHOULD STUDENTS WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER BE DIAGNOSED?

Although there is no single test for attention deficit/hyperactivity disorder (APA, 1994), an accurate diagnosis can be made by obtaining information about the child from several sources, including (1) personal histories on the child and his or her family, (2) tests and questionnaires that assess the child's behavior, and (3) direct observation of the child in several settings (U.S. Department of Education, 1994). Collecting such detailed information on each child identified as having difficulty paying attention or with hyperactive/impulsive behavior helps avoid problems of overidentifying (or underidentifying) children with attention deficit/hyperactivity disorder (Milich, Pelham, & Hinshaw, 1985).

The Professional Group for Attention and Related Disorders (PGARD) (1990) recommends a two-tier evaluation process to properly identify children with attention deficit/hyperactivity disorder. (See table 2 at the end of this paper.)

- Tier 1 (Clinical Evaluation) is used to determine whether the child's symptoms meet commonly accepted standards for an attention deficit/hyperactivity disorder diagnosis, such as those suggested by the DSM-IV; and
- Tier 2 (Educational Evaluation) is used to document that the child's attention deficit/hyperactivity disorder symptoms have a substantial, negative impact on his or her classroom performance.

Families, teachers, psychologists, and pediatricians must work as a team to diagnose children with attention deficit/hyperactivity disorder (Lahey et al., 1987). Each of these team members is able to provide critical data regarding an individual child. For example, at what age did the behaviors begin to appear? How often do they occur? To what extent do they occur? Where do they occur? How are these behaviors affecting the children's academic, emotional, and social lives? By pooling all of this knowledge among the team members, it is possible to get an overall picture of whether a child should be diagnosed as having attention deficit/hyperactivity disorder (Mash, 1989). This information is also critical in developing appropriate treatment programs, including determining the child's need for services, under IDEA or other Federal legislation.

WHAT ARE THE LEGAL RIGHTS OF STUDENTS WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER?

Children with attention deficit/hyperactivity disorder may be eligible for special education and related services under IDEA or under Section 504 of the Rehabilitation Act of 1973, as amended. As is true for students with any other disability, students with attention deficit/hyperactivity disorder are not automatically eligible for services under these two Acts. They must meet the eligibility criteria of the Acts to receive services. This section outlines those criteria.

Eligibility Under IDEA. IDEA, Part B, requires that each State have in effect a policy that ensures all children with disabilities the right to a free, appropriate public education (FAPE) (20 U.S.C. 1412[1]). It is the State educational agencies' (SEAs') and local educational agencies' (LEAs') affirmative obligation to evaluate a child who is suspected of having a disability to determine the child's need for special education and related services (Davila, Williams, & MacDonald, 1991).

Although attention deficit/hyperactivity disorder is not a separate disability category under IDEA, children with the disorder who require special education and related services because of the disorder are eligible for services under the "other health impairments" category of IDEA, Part B, when the child's disorder is a chronic or acute health problem that results in limited alertness and adversely affects his or her educational performance. Children with attention deficit/hyperactivity disorder may also be eligible for services under other eligibility categories such as the "specific learning disability" or "serious emotional disturbance" categories of IDEA, Part B, when they have those conditions in addition to their attention deficit/hyperactivity disorder.

Programs and Services Under Section 504. If a child with attention deficit/hyperactivity disorder is found to be ineligible for services under IDEA, Part B, the requirements of Section 504 of the Rehabilitation Act of 1973 are applicable, if the child has a disability as defined by this legislation. Section 504 defines a person with a disability as "any person who has a physical or mental impairment which substantially limits a major life activity (e.g., learning)" (34 CFR 104.3 [j]).

Depending on the nature and severity of his or her condition, a child with attention deficit/hyperactivity disorder may (or may not) fit the eligibility definitions contained in IDEA, Part B, or Section 504. As a result, not all children with attention deficit/hyperactivity disorder are entitled to services under one of these Acts.

If the child qualifies for services under Section 504, the LEA must make an individualized determination of the child's needs for general or special education and related aids and services (34 CFR 104.35). Individualized educational services must be provided to each child. Depending on the needs of individual children, these services can include (1) curriculum adjustments, (2) alternative classroom organization and management, (3) specialized teaching techniques and study skills, (4) use of behavioral management, and (5) increased parent/teacher collaboration. These types of supplementary aids and services enable some children with attention deficit/hyperactivity disorder to succeed in general education settings without special education services (Piffner & Barkley, 1990).

WHAT ARE EFFECTIVE TREATMENTS FOR CHILDREN WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER?

Different treatments, with varying known effects and limitations, are used by doctors, psychologists, and teachers who work with children with attention deficit/ hyperactivity disorder. Two types of standard treatments involve psycho-stimulant medications and educational programs (Pelham & Murphy, 1986). This section of the module describes current research on the effectiveness of these treatments.

Attention Deficit/Hyperactivity Disorder and Medication. Medication for children diagnosed with attention deficit/ hyperactivity disorder has become an issue of increasing public concern as more and more children across the country are diagnosed with attention deficit/hyperactivity disorder and prescribed drugs for treatment (Read, 1995). As Ross and Ross (1976) pointed out over 20 years ago, the limitations and the benefits of prescribing drugs as a treatment for attention deficit/hyperactivity disorder need careful examination.

Stimulants such as methylphenidate (i.e., Ritalin®), as well as pemoline (i.e., Cylert®) and amphetamines (e.g., Dexedrine®), are not effective for one out of every five children who take them (Silver, 1990). While the effects of these medications cause some children to exhibit clear and immediate short-term increases in attention, control, concentration, and goal-directed effort (Kavale, 1982), the long-term benefits of medication on social adjustment and academic achievement are limited (Gadow, 1983).

Medication can also have negative side effects (Forness, Sweeney, & Toy, 1996). For example, some children may lose weight, lose their appetite, or have problems falling asleep. Less common side effects include slowed growth, tic disorders, and problems with flexible thinking or with social interaction. These effects usually can be eliminated by reducing dosages or changing to different medications altogether, but careful monitoring is necessary (Runnheim, Frankenberger, & Hazelkorn, 1996).

Attention Deficit/Hyperactivity Disorder, Education, and Public Schools.

Although medication helps some children with attention deficit/hyperactivity disorder to manage their behavior for a short period, medication alone is not sufficient to ensure that these children learn and achieve at school (Swanson, 1994). All children with attention deficit/hyperactivity disorder need effective educational programs to stay on task and learn (U.S. Department of Education, 1994).

Research shows that many children with attention deficit/hyperactivity disorder can be taught effectively in general education classrooms, as the practices used by skilled teachers benefit not only the child with the disorder but his or her nondisabled classmates as well (Rief, 1993). Those teachers who are most successful with children with attention deficit/hyperactivity disorder often use a three-part approach, integrating different practices developed and validated through research on children's learning and achievement over the past 25 years. This body of research has provided information about the characteristics of effective programs for educating a child with attention deficit/hyperactivity disorder. Successful educational programs are based on three key principles:

- Effective teaching practices can involve several different techniques to support active, sustained learning (Collagen & Sternberg, 1987). For example, skilled teachers can (1) provide clear models demonstrating how proficient students learn (e.g., Englert et al., 1991), (2) assign students of different ability levels to work together (Greenwood et al., 1992), and (3) provide students with adequate feedback on their performance (McKinney,

Osborne, & Schulte, 1993). Such effective teaching practices, which were originally developed for children with learning and behavioral problems, are increasingly being used successfully with children with attention deficit/ hyperactivity disorder (Five & Becker, 1994).

- Behavior modification techniques can help children with attention deficit/hyperactivity disorder learn how to manage their behavior in a variety of different school settings, including the classroom, the lunchroom, and the playground. Techniques such as verbal praise or other positive reinforcement are some of the most commonly used classroom practices (McGinnis & Goldstein, 1984). Skilled teachers can use these techniques effectively not only with their children with attention deficit/hyperactivity disorder, but also with other students with disabilities (Walker, Colvin, & Ramsey, 1995) as well as nondisabled students (O'Leary & O'Leary, 1977).
- Classroom modifications are made in response to the needs of individual children with attention deficit /hyperactivity disorder (Pffifner & O'Leary, 1993). These modifications generally involve restructuring the instructional environment in the classroom (Broward County Public Schools, 1995). Teachers can make physical accommodations, such as providing a special seat for a child with attention deficit /hyperactivity disorder (Forness & Walker, 1991), or modifications of the learning environment, such as providing follow-up instructions for classroom assignments (Zentall, 1993).

At present, there is a continuing need for additional, rigorous research demonstrating the effectiveness of combining different treatments for children with attention deficit/hyperactivity disorder (Abikoff, 1987). For example, although Horn et al. (1991) initially reported that a low dosage of medication combined with behavioral interventions helped reduce problems with classroom discipline, children with attention deficit/hyperactivity disorder who received the combined treatment did not maintain their appropriate behaviors nine months after leaving the treatment program (Ialongo et al., 1993).

OSEP is currently collaborating with the National Institute of Mental Health to investigate the long-term effectiveness of multimodal treatments for children with attention deficit/hyperactivity disorder. This study compares the effects of different treatment programs that involve the use of medication and intensive home-school intervention -- both alone and in combination. This study, which is following more than 600 children with attention deficit/ hyperactivity disorder at six sites for two years, will provide critical information about which treatment program works best for which children with attention deficit/hyperactivity disorder, in which settings, and for how long.

SUMMARY

In States and localities across the country, families and educators are concerned about how to effectively educate children with attention deficit/hyperactivity disorder. The challenges that parents and teachers face each day include teaching children with attention deficit/hyperactivity disorder how to maintain their attention and control their hyperactivity and impulsivity. Teachers are also challenged to individualize educational programs in ways that help children with attention deficit/hyperactivity disorder successfully learn and achieve at school.

Recent research has begun to identify the distinguishing characteristics of effective programs for children with attention deficit/hyperactivity disorder. The results of these studies suggest that:

- Children with attention deficit/hyperactivity disorder can often be taught effectively in general education classrooms;
- Medication helps some children with attention deficit/hyperactivity disorder to control their behavior, but medication alone is often not sufficient to ensure that these children learn and achieve at school;
- Many effective educational programs for children with attention deficit/hyperactivity disorder include individualized academic instruction, behavior management techniques, and classroom modifications;
- Many educational practices that are useful in teaching children with attention deficit/hyperactivity disorder are also beneficial to all children in the class; and
- Teachers, parents, psychologists, and health care providers should work together as a team to help identify and serve children with attention deficit/hyperactivity disorder effectively.

Today, there is a continuing Federal commitment, through IDEA, Part B, and Section 504 of the Rehabilitation Act, to ensure that the needs of all eligible children with attention deficit/hyperactivity disorder are met. This support, combined with continuing efforts by teachers and parents to implement effective practices validated through research, will hopefully lead to improved results for children with attention deficit/hyperactivity disorder and their families.

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The tables mentioned in this paper are appended.

Table I
Attention Deficit/Hyperactivity Disorder

A. According to the DSM-IV, a person with Attention Deficit/Hyperactivity Disorder must have either (1) or (2):

- (1) six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- (a) often fails to give close attention to details or makes careless mistakes in school work, work, or other activities
- (b) often has difficulty sustaining attention in tasks or play activities
- (c) often does not seem to listen when spoken to directly
- (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- (e) often has difficulty organizing tasks and activities
- (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- (h) is often easily distracted by extraneous stimuli
- (i) is often forgetful in daily activities

- (2) six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) often fidgets with hands or feet or squirms in seat
- (b) often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness).
- (d) often has difficulty playing or engaging in leisure activities quietly
- (e) is often "on the go" or often acts as if "driven by a motor"

(f) often talks excessively

Impulsivity

(g) often blurts out answers before questions have been completed

(h) often has difficulty awaiting turn

(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
- C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
- E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Disassociative Disorder, or a Personality Disorder).

Attention Deficit/Hyperactivity Disorder, Combined Type: if both Criteria A1 and A2 are met for the past 6 months.

Attention Deficit/Hyperactivity Disorder, Predominantly Inattentive Type: if Criterion A1 is met but Criterion A2 is not met for the past 6 months.

Attention Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type: if Criterion A2 is met but Criterion A1 is not met for the past 6 months.

Source: American Psychiatric Association (1994). *Diagnostic and statistical manual for mental disorders*. Washington, DC: Author. pp. 83-85.

Table 2
PGARD System for Identifying Children with ADHD

CLINICAL EVALUATION

A clinical evaluation assesses whether the child is manifesting symptoms of ADHD. There are three objectives: (1) assess problems of inattention, impulsivity, and hyperactivity that the child is currently experiencing; (2) assess the severity of these problems; and (3) gather information about other disabilities that may be contributing to the child's ADHD symptoms.

Child rating scales are the best available tools to determine the presence of ADHD symptoms. Numerous rating scales exist, including:

- *Child Behavior Checklist, Teacher Report Form, and Parent Report Form*, by Achenbach and Edelbrock (1983, 1986), and
- *Conners Parent Rating Scale and Conners Teacher Rating Scale* by Conners (1989, a, b).

As with all psychological tests, child rating scales have a range of measurement error. Appropriate scales have satisfactory norms for the child's chronological age and ability levels.

Collecting information about the child's ADHD symptoms from several different sources helps ensure that the information is accurate. Appropriate sources of information include the child's parents, teachers, and medical doctors. It is also important to review both the child's previous medical history, as well as his or her school records.

EDUCATIONAL EVALUATION

An educational evaluation assesses the extent to which a child's symptoms of ADHD have had an adverse effect on his or her performance at school. The evaluation involves both direct observations of the child in the classroom as well as a review of his or her academic productivity.

Classroom observations are used to record how often the child exhibits different ADHD symptoms in the classroom. The frequency with which the child with ADHD exhibits behaviors associated with ADHD symptoms are compared to norms for other children of the same age and gender. It is also important to compare the behavior of the child with ADHD with that of other children in the class. It is best to collect classroom observations during two or three different observations across several days. Each observation typically lasts about 20-30 minutes.

An educational evaluation also includes an assessment of the *child's productivity* in completing seat work and other academic assignments. It is important to collect information about both the percentage of work completed as well as the accuracy of the work. The productivity of the child with ADHD can be compared with the productivity of other children in the class.

Adapted from: U.S. Department of Education (1994). *Attention deficit disorder: Adding up the facts*. Washington DC: Office of Special Education Programs. U.S. Department of Education, pp. 3-4.

Source of this paper:

Office of Special Education Programs. (1997). Students with attention deficit/hyperactivity disorder. *Nineteenth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: U.S. Department of Education, pp. II-29 through II-47.

The Alliance Project (#8029K4085) is supported by the U.S. Department of Education, Office of Special Education Programs (OSEP). Opinions expressed herein are those of the sources and do not necessarily represent the position of the U.S. Department of Education.