IDEAs that Work
U.S. Office of Special Education Programs

FACTS *from* OSEP's National Longitudinal Studies

November 2004

A Profile of Students with ADHD Who Receive Special Education Services

What Is Attention-Deficit/Hyperactivity Disorder (ADHD)?

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common chronic health conditions among school-age children.[1] As more has been understood about ADHD, the number of people diagnosed with the disorder has increased greatly. Although exact figures are not known, it is estimated that approximately 7% of school-age students[2]—or more than 3.5 million[3]—have ADHD. But what is this disorder that affects so many children and youth?

Simply put, ADHD is a disorder characterized by three types of behavior:

- Inattention—for example, frequent careless mistakes, difficulty sustaining attention to tasks or play activities, not seeming to listen when spoken to directly.
- Hyperactivity—for example, fidgeting, talking excessively, running about.
- Impulsivity—for example, difficulty awaiting a turn, interrupting or intruding on others, blurting out answers before a question is finished.[4]

One or more of these behaviors, which usually begin during childhood, may predominate.

The behaviors that characterize ADHD can affect many aspects of life. For example, they can make it difficult for students to do many of the typical things that they are expected to do in school, such as paying attention to instructions, sitting quietly while teachers talk, waiting to be called on to answer a question, staying on task when given an assignment, or finishing tests within the allotted time. ADHD also can make many types of jobs difficult and can affect social relationships.

These issues and the growing prevalence of ADHD present challenges not just for students with ADHD but for their parents and schools as well. To meet the challenges, it is important to understand the characteristics of students with ADHD and their experiences both in and out of school. Two studies sponsored by the Office of Special Education Programs (OSEP) of the U.S. Department of Education, SEELS and NLTS2,[5] are providing some of this much-needed information by including a subset of children and youth with ADHD who receive special education services.

Who Are Students with ADHD Who Receive Special Education Services?

Because the exact prevalence of ADHD among all students is not known, it is difficult to estimate how many of those students receive special educa-

[1] American Academy of Pediatrics. (2000). Clinical practice guideline: Diagnosis and evaluation of the child with attention deficit/hyperactivity disorder. *Pediatrics, 105*(5), 1158-1170.

[2] *Ibid*.

[3] Calculated with data for total elementary and secondary school enrollment from National Center for Education Statistics. (2002). Chapter 1. Table 2.—Enrollment in educational institutions, by level and control of institution: Fall 1980 to fall 2005. Retrieved 7/19/04 from http://nces.ed.gov/programs/digest/d02/tables/PDF/table2.pdf

[4] American Academy of Pediatrics. (2000). *Op. cit.*

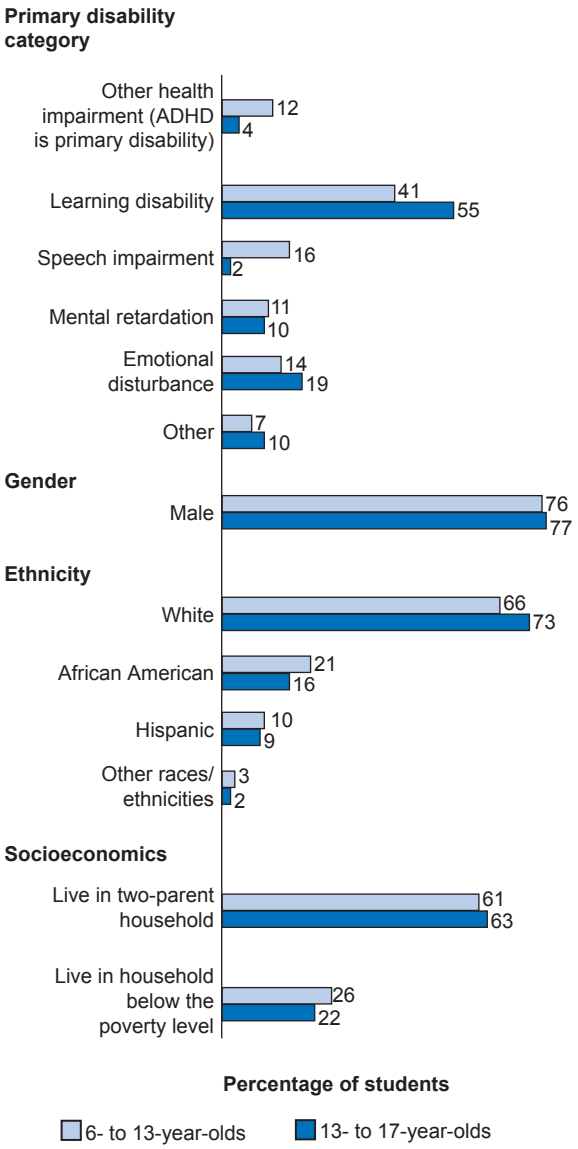
[5] The Special Education Elementary Longitudinal Study (SEELS) has a nationally representative sample of more than 11,000 students who were in at least first grade and receiving special education services in the 1999-2000 school year and were ages 6 through 13 when data first were collected in 2000. The sample for the National Longitudinal Transition Study-2 (NLTS2) is similar to that of SEELS but consists of youth who were in at least seventh grade and receiving special education when selected for the study and were ages 13 through 17 when data first were collected in 2001.

tion services. However, it is known that 11.5% of all K-12 students receive special education services,[6] and parents or schools report that approximately 37% of those students have ADHD.[7] Thus, approximately 4.3% of all K-12 students have ADHD and receive special education services. If the 7% estimate of prevalence among all K-12 students is used, this 4.3% would mean that approximately 61% of all students who have ADHD receive special education services.

Most students with ADHD who receive special education services have a primary disability other than ADHD.[8] Only 12% of 6- to 13-year-olds and 4% of 13- to 17-year-olds have a primary disability classification of "other health impairment," the federal disability category that includes ADHD when it is a primary disability (Exhibit 1).[9, 10] Among younger students who have ADHD, 41% have a primary classification of learning disability; from 11% to 16% have a primary classification of speech impairment, mental retardation, or emotional disturbance; and 7% have some other classification. Among older students who have ADHD, 55% have a primary classification of learning disability, 2% of speech impairment, 10% of mental retardation, 19% of emotional disturbance, and 10% of some other classification.

Boys predominate by about 3 to 1 among students with ADHD who receive special education services; this ratio is important to take into account when interpreting findings because boys are more likely than girls to have negative experiences, such as disciplinary actions in school[11] and involvement

Exhibit 1
SELECTED CHARACTERISTICS OF STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



Sources: SEELS and NLTS2 Wave 1 parent interviews.

[6] U.S. Department of Education. (2002). *Twenty-fourth Annual Report to Congress on the implementation of the Individuals with Disabilities Act.* Washington, DC: Education Publications Center.

[7] Sources: SEELS and NLTS2 wave 1 parent interviews and school program surveys. In this fact sheet, students are considered to have ADHD if either their parent or their school so indicated. Parents and schools do not agree in all cases for which information was obtained from both sources; however, there is a high degree of concordance. For younger students, parents and schools agree in 79% of cases, parents indicate that students have ADHD when schools indicate they do not in 16% of cases, and schools indicate that students have ADHD when parents do not in 4% of cases. For older students, parents and students agree in73% of cases; parents indicate that students have ADHD when schools indicate they do not in 24% of cases, and vice versa in 3% of cases.

[8] Throughout this data brief, the term "students with ADHD who receive special education services" is used to refer to students whose primary disability is ADHD as well as students who are reported to have ADHD in addition to some other primary disability.

[9] IDEA '97 Final Regulations. 34 CFR 300. Assistance to States for the Education of Children with Disabilities (Part B of the Individuals with Disabilities Act). Section 300.7(c)(9)(i).

[10] The 12 federal disability classifications examined by SEELS and NLTS2 are autism, deaf-blindness, emotional disturbance, hearing impairment, learning disability, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, speech impairment, traumatic brain injury, and visual impairment.

[11] Bushweller, K. (1994). Turning our backs on boys. *The American School Board Journal*, *181*(5), 20-25. Cited in T. McIntyre & V. Tong. (1998). Where the boys are. *Education and Treatment of Children, 21*(3), 321-332. Retrieved 7/21/04 from http://maxweber.hunter.cuny.edu/pub/eres/EDSPC715_MCINTYRE/Gender.html

with the criminal justice system.[12] The distribution of race/ethnicity of students with ADHD who receive special education services does not differ markedly from that of the general population of students; approximately two-thirds are white, approximately one-fifth are African American, one-tenth are Hispanic, and 3% are other races/ethnicities.[13] On the other hand, socioeconomic factors may play a part in increasing the risk of poor outcomes for students with ADHD. Approximately 40% of students in both age groups do not live in two-parent households, and about 25% live in households with incomes below the federal poverty level. These percentages are substantially higher than the 31% of 6- to 17-year-old students in the general population who do not live with both parents[14] and the 16% who live in poverty.[15]

Furthermore, the impulsivity, inattention, and hyperactivity that characterize ADHD often are associated with poor social skills, also increasing the risk of poor outcomes. Among students with ADHD who receive special education services, 39% of 6- to 13-year-olds and 35% of 13- to 17-year-olds have low social skills, according to parents.[16] These percentages far exceed the 6% and 18% of same-age students in the general population who score low on the same scale.[17]

Despite the factors that are associated with negative outcomes for students with ADHD who receive special education services, there are interventions, supports, and services that can help them succeed. The following sections examine some of these.

Interventions for Students with ADHD Who Receive Special Education Services

Although behavioral therapies alone have been found to be valuable for some children with ADHD, medication has been found to be more effective,[18] and recent research reports that children who receive both types of treatment have the most positive outcomes of all.[19] Psychological counseling has long been used for children with ADHD, and although it has not been found to ameliorate the core symptoms of ADHD, it can be very important in helping children cope with everyday problems and raise their self-esteem.[20]

But how many students with ADHD who receive special education services for ADHD or another disability receive each type of intervention?

According to parents, approximately 80% of younger students and 70% of older students with ADHD who receive special education services take medication and/or receive mental health services or behavioral therapy (Exhibit 2). About 60% of younger students with ADHD take psychotropic medications; however, use of such medications appears to be less common among older students, 41% of whom take them. Most students in both age groups who take medication at all take some type of stimulant; however, substantial numbers take antidepressants or anti-anxiety medication.

Parents also report that more than half of students with ADHD who receive special education services receive mental health services or behavioral therapy in a 12-month period. Among both age groups, mental health services are most common, being received by 41% of younger students and 49% of older

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[12] U.S. Department of Justice, Federal Bureau of Investigation. (2003). *Crime in the United States, 2002.* Retrieved 7/21/04 from http://www.fbi.gov/ucr/cius_01/01crime.pdf

[13] Among all 6- to 17-year-old students in the general population in 1999, 65% were white, 16% were African American, 14% were Hispanic, and 5% were other races/ethnicities. (Calculated with data from the National Household Education Survey, 1999. http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000079)

[14] Calculated with data from the National Survey of America's Families, 1999 (http://www.urban.org/content/Research/NewFederalism/NSAF/PublicUseData/PubUse.htm).

[15] U.S. Census Bureau. (2001). Table 23. Single years of age—Poverty status of people in 2000. *Current Population Survey, Annual Demographic Survey, March Supplement*. Retrieved 7/9/04 from http://ferret.bls.census.gov/macro/032001/pov/new23_001.htm

[16] The following items were used from the Social Skills Rating Scale (SSRS) [Gresham, F. M., & Elliott, S. N. (1990). *Social Skills Rating System manual.* Circle Pines, MN: American Guidance Service] to create a social skills scale: makes friends easily, is self-confident in social situations, joins groups without being asked, starts conversations, controls his/her temper when arguing with other children, receives criticism well, avoids situations that are likely to result in trouble, speaks in an appropriate tone of voice in the home, ends disagreements calmly. "Low" scores are values that are lower than the mean for the general population minus one standard deviation from the mean for the general population.

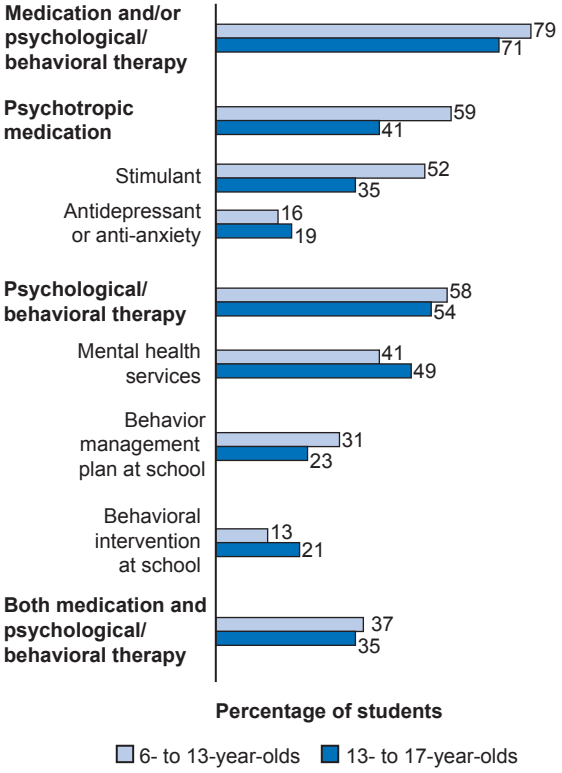
[17] Calculated with data from the SSRS.

[18] American Academy of Pediatrics. (2001). Clinical practice guidelines: Treatment of the school-aged child with attention-deficit/hyperactivity disorder. *Pediatrics, 108*(4), 1033-1044.

[19] *Ibid.*

[20] National Institute of Mental Health. (2003). *Attention deficit hyperactivity disorder.* Retrieved 7/13/04 from http://www.nimh.nih.gov/publicat/adhd.cfm

Exhibit 2
INTERVENTIONS FOR STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



Sources: SEELS and NLTS2 Wave 1 parent interviews and school program surveys.

students. School staff report that 31% of younger students have behavior management plans and that 13% receive behavioral interventions. Among older students, 23% are reported to have a behavior management plan, and a similar percentage (21%) are reported to receive behavioral interventions. Fewer than 40% of students in either age group are reported to receive both medication and behavioral or psychological therapies.

Obtaining services can be challenging; although more than half (56%) of 13- to 17-year-olds with ADHD who receive special education services have parents who report that obtaining services took little or no effort, parents of almost one in four (23%) report that it took "some" effort, and parents of approximately one in five (21%) report that it took "a great deal" of effort.[21]

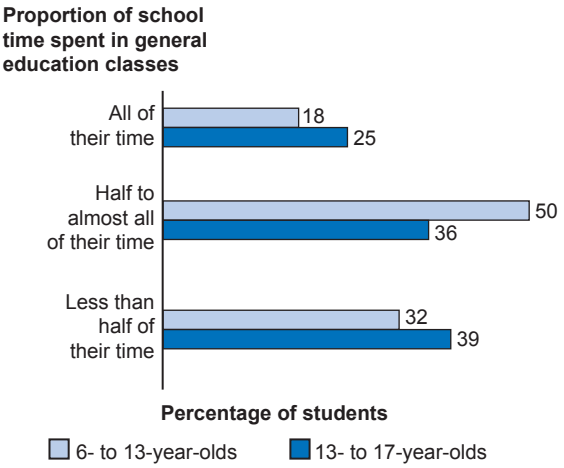
[21] The question about level of effort to obtain services was not asked of parents of younger students.

School Settings and Supports

Instructional settings. Serving students with disabilities in the "least restrictive environment" has long been a basic tenet of special education law and policy. Eligible children with ADHD must be placed in regular education classrooms, to the maximum extent appropriate to their educational needs, with the use of supplementary aids and services if necessary.[22] Of course, for some children with ADHD, who may or may not have co-occurring disabilities, special education or related aids or services may need to be provided in other settings.

School staff report that, on average, younger students with ADHD who receive special education services for ADHD or another disability spend 60% of their class time in general education classes and 40% in special education classes, whereas older students spend about half of their time in each type of class. However, there is a wide range in the amount of time spent in general education classes. For example, among younger students, 18% spend all of their time in general education classes, and 32% spend less than half of their time in such settings (Exhibit 3). Among older students, 25% spend all of their time in general education classes, and 39% spend less than half of their time in such settings.

Exhibit 3
GENERAL EDUCATION PARTICIPATION OF STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



Sources: SEELS and NLTS2 Wave 1 school program surveys.

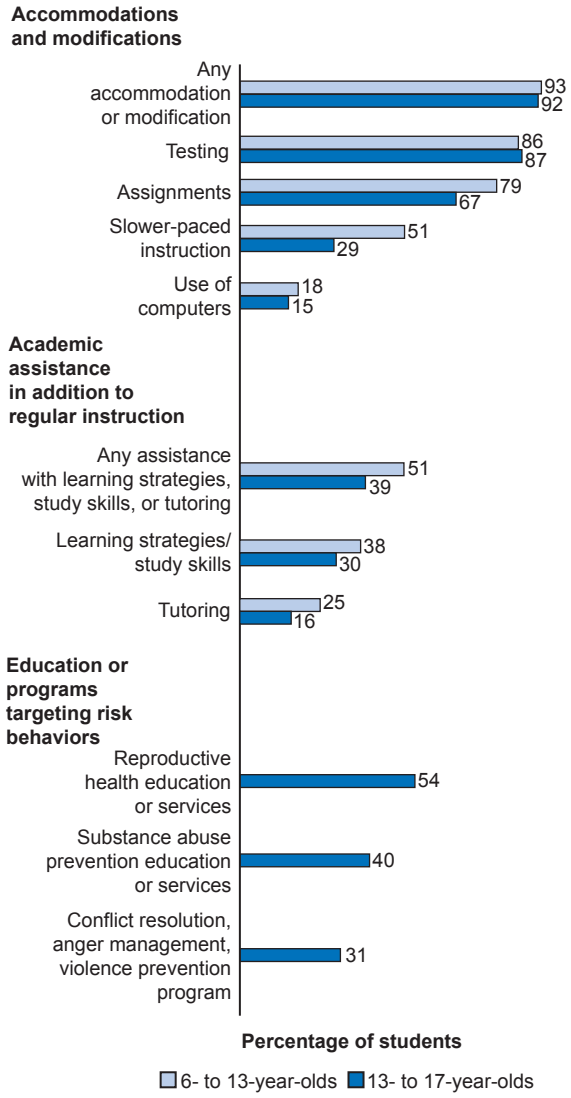
[22] U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2003). *Identifying and treating attention deficit hyperactivity disorder: A resource for school and home*. Washington, DC: Author.

Student supports. Many supports for students with disabilities are intended to help them cope with the mismatch between their abilities/disabilities and their environment.[23] In the case of students with ADHD, recommended supports include tailoring instruction, assignments, and/or testing to minimize the impact of their inattention, hyperactivity, and impulsiveness. For example, more meaningful curricula and assignments can increase students' attentiveness, computer instruction can allow them to work at their own pace and provide immediate feedback, one-to-one tutoring can help students gain knowledge in a way that is tailored to their needs, shorter assignments can be completed before students' attention wanes, and shorter or alternative tests also can accommodate shorter attention spans.[24] In addition, students' academic outcomes can improve if they are taught specific strategies for learning and studying.[25]

The vast majority of students with ADHD who receive special education services receive one or more accommodations (Exhibit 4). Among younger students, 86% receive at least one accommodation related to testing, 79% receive at least one accommodation related to assignments, 51% receive slower-paced instruction, and 18% use computers for activities for which other students are not allowed to use them. Among older students, 87% receive at least one accommodation related to testing, 67% receive at least one accommodation related to assignments, 29% receive slower-paced instruction, and 15% use computers for activities for which other students are not allowed to use them.

Despite the ways ADHD can present challenges to learning, schools provide assistance with learning strategies or study skills or tutoring by a peer or an adult to relatively few students with ADHD who receive special education services. About half of younger students receive either type of assistance, with 38% receiving assistance with learning strategies or study skills and 25% receiving tutoring. Among older students, percentages are somewhat smaller.

Exhibit 4
SELECTED SUPPORTS AND PROGRAMS PROVIDED BY SCHOOLS TO STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



Sources: SEELS and NLTS2 Wave 1 school program surveys.

Besides academic assistance, schools can provide education or services that target risk behaviors. They can be particularly helpful to students with ADHD because these students are almost three times as likely as other youth to engage in risk behaviors, such as substance abuse, teenage pregnancy, and antisocial behavior.[26] Among older students with ADHD who

[23] Appalachia Educational Laboratory. *ADHD—Building academic success.* Retrieved 9/3/03 from http://www.ldonline.org/ld_indepth/add_adhd/ael_success.html

[24] *Ibid.*

[25] U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2004). *Teaching children with attention deficit hyperactivity disorder: Instructional strategies and practices*. Washington, DC: Author.

[26] Youngblade, L. M., Col, J. F., & Shenkman, E. A. (2002). *Adolescent ADHD and risky behavior: Prevalence, odds, and moderation by medication*. Presentation given at the 130th Annual Meeting of the American Public Health Association, Abstract #50113. Retrieved 7/12/04 from http://apha.confex.com/apha/130am/techprogram/paper_50113.htm

receive special education services, the most common of these types of programs is reproductive health education or services, provided to somewhat more than half.[27] Forty percent receive substance abuse prevention education or services, and 31% participate in programs for conflict resolution, anger management, or violence prevention. A relatively high level of unmet need for these programs among youth with ADHD who receive special education services is reported by school staff, who indicate that another 28% could benefit from reproductive health education or services, 34% could benefit from substance-abuse-related programs, and 40% could benefit from conflict resolution, anger management, or violence prevention programs.

With this level of treatment and support, how are these students doing in school?

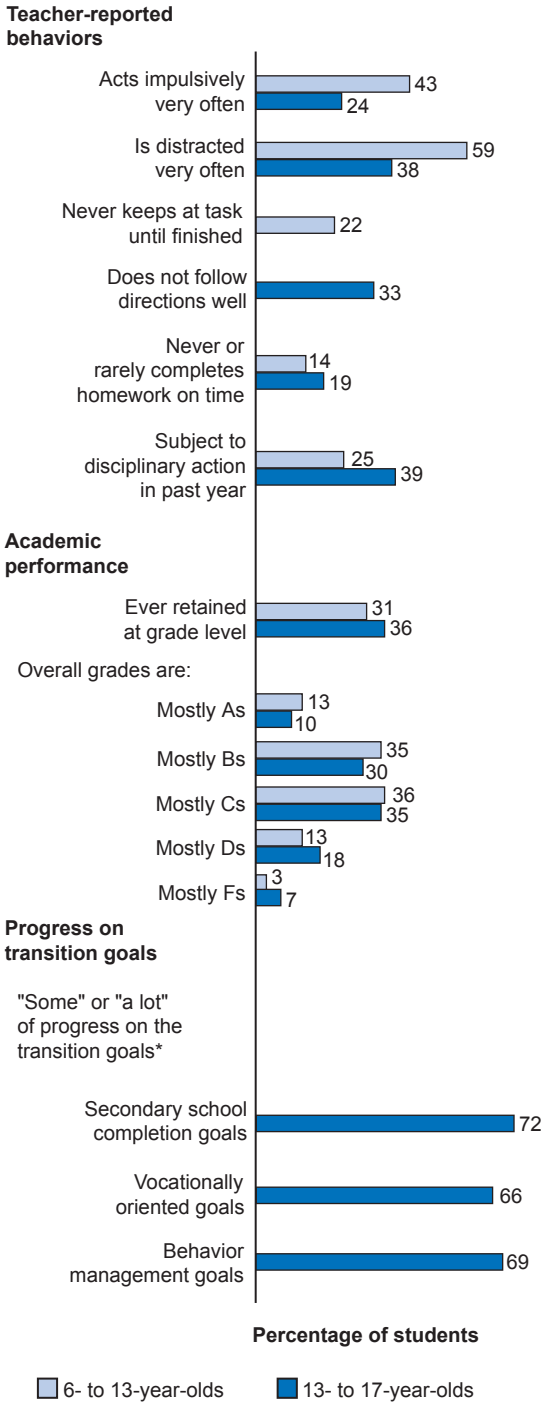
Behaviors, Performance, and Progress in School

Teachers' reports of the school behaviors of students with ADHD who receive special education services are consistent with the nature of the students' disabilities. Approximately two in five younger students are reported "very often" to act impulsively, and almost three in five are reported "very often" to be distracted (Exhibit 5). In addition, although most manage to complete their work, approximately one in five reportedly never keep at a task until finished, and one in seven rarely or never complete their homework on time. One in four are subject to some disciplinary action, suspension, or expulsion in a given school year.

Compared with younger students, older students with ADHD who receive special education services are less likely to act impulsively or be distracted; still, one in four "very often" act impulsively, and more than one in three "very often" are distracted, according to teachers. In addition, teachers report that one in three do not follow directions well, one in five never or rarely complete their homework on time, and two in five are subject to disciplinary action during a school year.

Research has found that students with ADHD have lower grades, higher grade level retention rates, and more suspensions and expulsions than other

Exhibit 5
BEHAVIORS AND ACADEMIC PERFORMANCE IN SCHOOL OF STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



*Includes only students who have each transition goal. Not asked for younger students.

Sources: SEELS and NLTS2 Wave 1 parent interviews, school program surveys, and teacher surveys.

[27] Services included may be provided by the school or by other agencies, as long as they are contracted for by the school system.

students.[28] For students with ADHD who receive special education services, reports of academic performance are mixed. On one hand, most students appear to be performing well, with more than 40% earning grades of mostly As or Bs, and approximately another 35% earning mostly Cs.[29] On the other hand, 16% of younger students have grades of mostly Ds or Fs, and 31% have been retained at grade level at some time during their schooling. Among older students, 25% have grades of mostly Ds or Fs, and 36% have been retained at some time.[30] These grades and retention rates are worse than those of same-aged students in the general population. According to parents, 40% of 6- to 13-year-olds in the general population receive mostly As, 38% mostly Bs, 18% mostly Cs, and 4% mostly Ds or Fs, and 8% have been retained in grade; 34% of 13- to 17-year-olds receive mostly As, 38% mostly Bs, 22% mostly Cs, and 6% mostly Ds or Fs, and 16% have been retained in grade.[31]

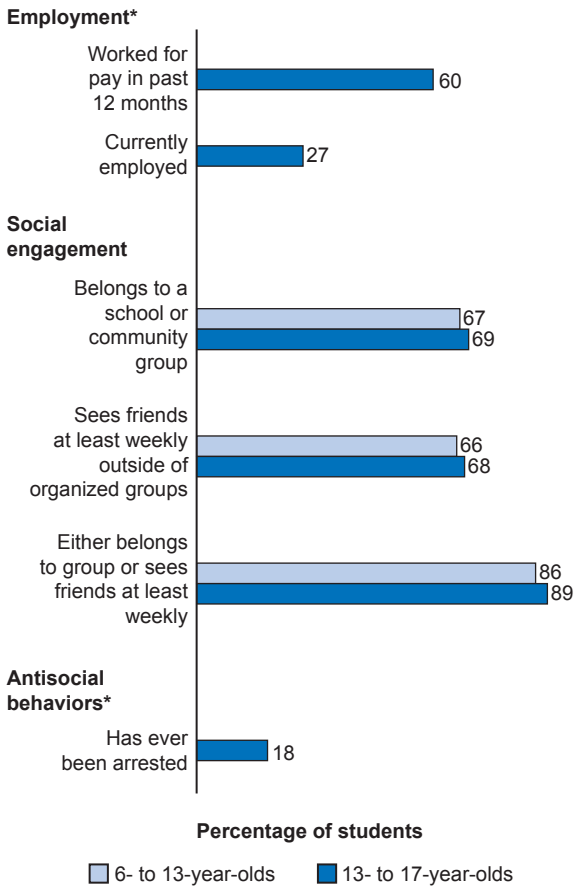
Current grades and past retention tell only part of the story, however. For older students, another important indicator of performance is their progress toward their transition goals. In recognition of the importance of planning for postschool life, transition planning is done for all students ages 14 or older who receive special education services, with goals tailored to students' specific preferences and abilities. Like academic performance, students' progress on these goals presents a mixed picture. From 66% to 72% of students with each goal are reported to be making "some progress" or "a lot of progress" toward them. However, 17% are not progressing toward any of them.

Experiences in the Nonschool Hours

Research has found that ADHD not only affects academic performance but also decreases vocational success and increases the risk of social isolation and antisocial behavior.[32, 33] How do students with ADHD who receive special education services fare in their nonschool hours?

The 12-month employment rate of 14- to 17-year-old students with ADHD[34] (60%; Exhibit 6) exceeds that of same-aged students in the general population (50%).[35] Although this employment rate

Exhibit 6
LIFE OUTSIDE THE CLASSROOM FOR STUDENTS WITH ADHD WHO RECEIVE SPECIAL EDUCATION SERVICES



*Includes only 14- to 17-year-olds.

Sources: SEELS and NLTS2 Wave 1 parent interviews.

[28] U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2003). *Op. cit*.

[29] Parents were the primary source of information about grades. For students without parent interviews, information from the school survey was used.

[30] Parents were the sole source of information about retention in grade.

[31] Calculated with data from the National Household Education Survey, 1999. http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000079

[32] National Institutes of Health. (1998). Diagnosis and treatment of attention deficit hyperactivity disorder. NIH Consensus Statement Online, 16(2): 1-37. Retrieved 7/12/2003 from http://consensus.nih.gov/cons/110/110_statement.htm#3

[33] Pledge, D. (2002). *ADD and ADHD: An overview for school counselors.* ERIC Digest (ED 470 600 CG 032 078).

[34] For comparability with the general population of youth, analyses of employment and arrests include only 14- to 17-year-old students.

[35] Calculated with data from the National Longitudinal Survey of Youth, 1997. Retrieved 7/18/04 from http://www.nlsinfo.org/web-investigator/frame.php?xxx=nlsy97

affirms their ability to get a job, the fact that their current employment rate is lower than that of their age-mates in the general population (27% vs. 36% are employed on a given date) suggests that they may have more difficulty than other youth keeping a job.

A large majority of students with ADHD who receive special education services are socially active. Slightly fewer than 70% of students in both age groups belong to organized groups at school or in the community. Interestingly, these percentages are somewhat higher than those of students in the general population; 51% of 6- to 13-year-olds and 61% of 13- to 17-year-olds in the general population belong to organized groups.[36] In addition, approximately two-thirds of students with ADHD who receive special education services see friends at least weekly outside of school or such groups. Taking both types of social engagement together shows that more than 85% are socially active.

However, these indicators of positive social engagement stand in contrast to the fact that almost one in five 14- to 17-year-old students with ADHD (18%) have been arrested—double the rate of 14- to 17-year-old students in the general population (9%).[37]

Summary

Students with ADHD who receive special education services are a diverse group; they vary in their disability profiles, family and demographic characteristics, the interventions they receive, their school and social experiences, and their outcomes. Most of them have some other primary disability—most commonly a learning disability, but often speech impairment or emotional disturbance. The majority have medium or high social skills, live in two-parent households, and have household incomes above the poverty level. More than two-thirds receive medication or behavioral or psychological therapies. Most spend at least half of their school time in general education classes and receive some type of accommodation or modification. Well more than half have passing grades in school, and a large majority are socially engaged. Most older students are making progress toward their transition goals, and many have worked for pay.

On the other hand, the students with ADHD who receive special education services and are not doing well cannot be ignored. Students with ADHD who receive special education services are more likely than their age-mates in the general population to have poor social skills, and the majority are reported by teachers to exhibit the distractedness at school that is the signature behavior of their disability. One in four younger students with ADHD who receive special education services are subject to disciplinary action in a year, as are two in five older students. Their grades are lower and their retention rates higher than those of students in the general population. In addition, many teens with ADHD appear to have more difficulty than other youth retaining a job, and almost one in five have been arrested.

These outcomes, taken together with findings concerning treatments, services, and supports, suggest considerable unmet need for medical and behavioral treatments, for educational accommodations related to instruction and technology, for support through tutoring and assistance with learning strategies, and for programs targeting risk behaviors. Thus, these findings from SEELS and NLTS2 highlight several opportunities for enhancing services and supports for students with ADHD that might have positive effects on their outcomes both in and out of school.

For more information from SEELS and NLTS2, see:

http://www.seels.net
http://www.nlts2.org

[36] Calculated with data from the National Survey of America's Families, 1999 (http://www.urban.org/content/Research/NewFederalism/NSAF/PublicUseData/PubUse.htm).

[37] Calculated with data from the National Longitudinal Survey of Youth, 1997. Retrieved 7/18/04 from http://www.nlsinfo.org/web-investigator/frame.php?xxx=nlsy97

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