# **Research Briefs**

Update on Adult AD/HD

by Sam Goldstein, Ph.D.

## Continuity of the Condition

ver the past two years, an increasing number of important studies of attention-deficit/hyperactivity disorder (AD/HD) in adults have been published. As editor of the Journal of Attention Disorders (JAD), I published 11 studies dealing with adult AD/HD in 2006 out of a total of 42 studies.

Since the 1994 publication of Drs. Edward Hallowell's and John Ratey's trade text, Driven to Distraction, focused attention on adults with AD/HD, clinical practice in adult AD/HD has primarily been driven by experience and best guess rather than empirical science. Controversy has been a constant companion to the diagnosis and treatment of the disorder in adults in lay and even in some professional circles. Fortunately the research literature has recently seen a significant increase in peerreviewed, scientific studies published worldwide investigating adult AD/HD.

■ Kessler, R.C., Adler, L., Barkley, R., Biederman, J., Conners, C.K., Demler, O., et al. (2006). The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication. American Journal of Psychiatry, 163, 716-723.

A screen for adult AD/HD was included in a sample of more than 3,000 respondents between the ages of 18 and 44, a nationally representative household survey using a diagnostic interview to assess a wide range of disorders from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Follow-up interviews were carried out with 154 respondents who screened positive for adult AD/HD. The estimated prevalence of current adult AD/HD was 4.4 percent. The researchers found a correlation between screening positive for AD/HD and being male, previously married, unemployed and non-Hispanic, white. Adult AD/HD was highly comorbid with many other DSM-IV disorders assessed in the survey and was associated with substantial impairment. The majority of cases were untreated, although many individuals had obtained treatment for other co-occurring mental and substance-related disorders. The authors suggest that additional research is needed to determine whether effective treatment would reduce the onset, persistence and severity of disorders that co-occur with AD/HD.

■ Riccio, C.A., Wolfe, M., Davis, B., Romine, C., George, C., & Lee, D. (2005). Attention deficit hyperactivity disorder: Manifestation in adulthood. Archives of Clinical Neuropsychology, 20, 249-269.

The authors sought to investigate AD/HD in adults using a combination of structured clinical interview, behavioral self-report and a range of neuropsychological measures. Adults diagnosed with AD/HD were compared to two groups, one with non-diagnosed adults and another adult sample with symptoms of other clinical disorders. Those with AD/HD consistently demonstrated problems in forgetting, poor organization, losing things and difficulty with follow through. Adults with AD/HD also showed problems meeting deadlines, not completing tasks, not planning ahead and having a weak sense of time more frequently than adults in either the no-diagnosis or other clinical disorder groups. The authors suggest that since many adults exhibit difficulties associated with AD/HD, continued research is imperative, particularly a large-scale field study to establish the most appropriate diagnostic criteria for determination of AD/HD in adults.

■ McGough, J.J., Smalley, S.L., McCracken, J.T., Yang, M., Del'Homme, M., Lynn, D.E., & Loo, S. (2005). Psychiatric comorbidity in adult attention deficit hyperactivity disorder: Findings from multiplex families. American Journal of Psychiatry, 162, 1621-1625.

Lifetime AD/HD and co-occurring mental



This research brief summarizes a number of important articles published in the past two years dealing with the continuity of AD/HD into adulthood, symptom presentation, risks and treatment.

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disorders were assessed in 435 parents of children with AD/HD. The authors found that parents with AD/HD were significantly more likely to be unskilled workers and less likely to have completed a college degree. Parents with AD/HD had more lifetime co-occurring mental disorders; 80 percent had at least one and 56 percent had at least two other psychiatric disorders compared with 64 percent and 27 percent, respectively, in subjects without AD/HD. AD/HD was associated with greater disruptive behavior, substance use, and mood and anxiety disorders as well as with earlier onset of major depression, chronic depression, oppositional defiant disorder and conduct disorder. Male gender added risk for disruptive behavior disorders. Female gender and oppositional defiant disorder contributed to risk for depression and anxiety. AD/HD was not a significant risk factor for substance-use disorders when male gender, disruptive behavior disorders and socioeconomic status were controlled. This study adds to the growing body of literature noting that AD/HD in adulthood is associated with significant lifetime psychiatric comorbidity unexplained by other variables.

■ Biederman, J., Monuteaux, M.C., Mick, E., Spencer, T., Wilens, T.E., Silva, J.M., Snyder, L.E., & Faraone, S.V. (2006). Young adult outcome of attention deficit hyperactivity disorder: A controlled 10-year follow-up study. Psychological Medicine, 36, 167-179.

A 10-year prospective study of 140 youth without AD/HD and 120 with AD/HD, between the ages of 6 and 18, was taken from psychiatric and pediatric sources. At the 10-year follow-up, 112 (80 percent) and 105 (88 percent) of the AD/HD and controls, respectively, were reassessed (mean age = 22 years). The lifetime prevalence for disorders, including mood, anxiety, anti-social, developmental, and substance abuse were significantly greater in young adults with AD/HD compared to the control group. The authors conclude that by their young adult years, youth with AD/HD were at high risk for a wide range of adverse psychiatric outcomes, including elevated risks of antisocial, addictive, mood and anxiety disorders. The authors suggest that their findings provide further evidence for the high morbidity associated with AD/HD across the life cycle.

■ Barkley, R.A., & Fischer, M. (2005). Suicidality in children with ADHD, grown-up. ADHD Report, 13(6), 1-6.

The authors utilized data from their longitudinal study of 158 hyperactive and 81 control children followed for more than 13 years. Twelve questions dealing with the topic of suicidal behavior were asked of this sample. Six of the questions dealt with these issues during high school and the same six were repeated again after leaving high school. The authors report that children growing up with hyperactivity/AD/HD were significantly more likely to consider, attempt and be hospitalized for suicidal behavior during high school and were more likely to consider suicide after high school than children in the control group.

When risk factors were examined

#### What These Findings Mean

- he following valuable and important initial conclusions can be drawn from L these studies.
- Though some symptoms and types of impairment change as children with AD/HD grow into adulthood, AD/HD is a condition that presents throughout life with an incidence rate similar to that in childhood.
- Though the number of individuals seeking and receiving treatment for AD/HD across the lifespan continues to increase, it is still the case that the majority of adults with self-reported AD/HD symptoms are not receiving any type of treatment.
- In well-controlled studies of adults with AD/HD, the presence of co-occurring conditions such as antisocial behavior, personality and mood disorders, substance use and academic problems provides a stronger explanation than AD/HD for many of the life challenges these individuals experience.
- The research suggests that AD/HD may act as a catalyst. Though it may create risk for problems as wide ranging as suicidality and intellectual weakness, the greatest effect of AD/HD is the increased vulnerability adults with the disorder have to the onset of other significant psychiatric, emotional, behavioral, vocational, relationship and substance problems.
- Treatments for AD/HD that are effective in childhood are effective in adulthood, including medication. There is reason to believe that the majority of adults with AD/HD who do not suffer from significant comorbid problems use their medications appropriately. It is only when comorbid problems such as those related to antisocial behavior are present that treatments are misused.

individually, lifetime major depressive disorder, conduct disorder in adolescence, severity of AD/HD during the teenage years and adult follow-up, and being treated with stimulant medication in high school for AD/HD increased the likelihood of suicidal thoughts and attempts in high school. However, when these variables were examined jointly controlling for the others, the risk of suicidal thoughts in the hyperactive group/ AD/HD, during and after high school, was significantly predicted only by presence of lifetime major depressive disorder. Nonetheless, the authors also noted that stimulant treatment remained marginally associated with suicidal thoughts. even after controlling for the substantial contribution of major depressive disorder

and the marginally significant association with severity of teenage AD/HD. The authors suggested these findings warrant further examination in larger studies.

■ Barkley, R.A., Fischer, M., Smallish, L., & Fletcher, K. (2005). Young adult follow-up of hyperactive children: Antisocial activities and drug use. Journal of Child Psychology and Psychiatry, 45, 195-207.

The authors report on the lifetime social activities and illegal drug use of young adults in their longitudinal sample and a community control. In this population, youth with history of AD/HD appeared at greater risk for antisocial activities and arrest by young adulthood, a problem that appeared to be

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principally associated with illegal drug possession, use and sale. Those having co-occurring conduct disorder, however, appeared to engage in greater and more diverse substance use. The severity of teen AD/HD and the presence of conduct disorder predicted the use of hard drugs, while conduct disorder alone predicted marijuana and LSD use.

■ Bridgett, D.J., & Walker, M.E. (2006). Intellectual functioning in adults with ADHD: A meta-analytic examination of full scale I.Q. differences between adults with and without ADHD. Psychological Assessment, 18, 1-14.

This investigation examined differences in intellectual ability between adults with and without AD/HD by reviewing 33 studies. Primary analyses focused on 18 studies representing over 1,000 adults with AD/HD and nearly 1,000 non-clinical comparisons using the Wechsler Adult Intelligence Scale. Adults with AD/HD scored lower than controls on intelligence measures. However, the difference was small and not clinically meaningful. The presence of several moderators reflecting characteristics of the AD/HD sample and study methodology suggested that only a subset of adults with AD/HD, for example those with cooccurring disorders, may experience lower general intellectual ability relative to non-clinical comparison adults.

■ Wilens, T.E., Gignac, M., Swezey, A., et al. (2006). Characteristics of adolescents and young adults with ADHD who divert or misuse their prescribed medications. Journal of the American Academy of Child and Adolescent Psychiatry, 45, 408-414.

As part of a 10-year longitudinal study of youth with AD/HD, the authors evaluated medication diversion or misuse during a follow-up period. Structured psychiatric interviews and a self-report questionnaire regarding medication use in individuals taking medication for AD/HD compared with controls without AD/HD receiving psychotropic medication for non-AD/HD treatment were used. Of 98 subjects receiving psychotropic medications, 56 percent were receiving treatment for AD/HD. The authors found that 11 percent of the AD/HD group reported selling their medications compared to no subjects in the control group. An additional 22 percent of the AD/HD group reported misusing their medications compared with 5 percent of the control subjects. Those

with conduct or substance use disorders accounted for the misuse and diversion. A minority of subjects reported escalating their doses and simultaneous use with alcohol and drugs. The authors concluded the data indicated the majority of individuals with AD/HD, particularly those without conduct or substance use disorders, used their medications appropriately. The findings, however, highlight the need to monitor medication use in individuals with AD/HD who have conduct and substance use disorders as well as to select medications with a low likelihood of diversion or misuse for this particular population.

Even as this issue of Attention!® goes to press, important studies in adult AD/HD are being published. The February 2007 issue of JAD is devoted to the presentation of seven studies examining symptom presentation, assessment, emotional functioning and driving behavior in adults with AD/HD. It is equally important that families and those affected with AD/HD are aware of this significant research as it is for mental and medical health professionals. Knowledge provides a balanced view, helping those with AD/HD act as responsible consumers and allowing professionals to utilize promising techniques combining the skilled application of treatment methods conforming to accepted community standards and the responsible interpretation of clinical science. Knowledgeable, compassionate professionals offer those with AD/HD a powerful sense of hope by providing accurate information, understanding, support and, most importantly, treatment.

Sam Goldstein, Ph.D., is a member of Attention!® magazine's editorial advisory board and CHADD's professional advisory board. He is a member of the faculty at the University of Utah and in clinical practice as a neuropsychologist.

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