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## **HIGH-STRUNG AND STRUNG-OUT: Clinically relevant questions regarding adult ADHD and comorbid bipolar and substance abuse disorder**

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Attention Deficit Hyperactivity Disorder (ADHD) is characterized by a pattern of hyperactivity, forgetfulness, distractibility, impulsiveness and/or inattention, depending on the type of ADHD. Despite a symptom profile that affects critical executive functions, as well as, emotional and self-regulation, clinicians often question the long-term consequences of childhood and adolescent ADHD. Specifically, they question whether pediatric patients need only be supported through it until they grow out of it, of whether there are sequelae that also require treatment. Moreover, confusion exists as to the relationship between ADHD and disorders that commonly co-occur in emerging adults, such as bipolar disorder and substance abuse disorder. This paper reviews clinically relevant research regarding these issues.

For decades ADHD was limited to a diagnosis only in children and adolescents. Recent studies have established that ADHD also presents in adult populations. But even when diagnosed in adults, it is understood that onset of ADHD occurs during childhood (Biederman, 2005). Depending on the study, childhood prevalence of ADHD varies up to 12% (Kent & Craddock, 2003; Tamam et al., 2008; Wingo & Ghaemi, 2007). Adult prevalence is estimated at 4 to 5% across studies (Fischer et al., 2007; Tamam et al., 2008; Sobanski et al., 2007; Wingo & Ghaemi, 2007); for example, 4.4% of 18 to 44 year-olds met criteria for ADHD in the National Comorbidity Study Replication (NCS-R; Kessler et al., 2006). From this, it can be estimated that up to 50% of children affected by ADHD retain the condition during their full adult years (Tamam et al., 2008).

Age-of-onset and developmental follow-back studies reveal that 75% of cases of emerging adult disorders represent cases that first onset in childhood or adolescence (Kessler et al., 2005; Kim-Cohen et al., 2003). This appears to be the case for ADHD as well. Weiss (1992) found that 70% of emerging adults had persistent ADHD symptoms. Despite the apparent continuity across developmental stages, only 11% of the NCS-R adults who met criteria for ADHD reported receiving any treatment (Kessler, Adler, Barkley, et al., 2006).

The long-term impact on quality-of-life from a diagnosis of adult ADHD is considerable. Most patients suffering with adult ADHD experience substantial functional impairments in their daily activities. Biederman and Faraone (2006) studied over 500 adults with ADHD, finding that they achieve fewer educational milestones beyond high school, are less likely to be employed full-time, and have significantly lower average household incomes than people without the disorder. They were also twice as likely to get arrested or divorced. And, in terms of health, they were 78% more likely to be addicted to tobacco which, in turn, has significant associated medical morbidity and mortality. Barkley (2005) found that untreated adults with ADHD were three times as likely to be unemployed and four times as likely to contract an STD. Given the breadth and carry-over of negative outcomes across adulthood, adequate diagnosis and treatment of adult ADHD is an important mental and public health issue.

Diagnosis of ADHD in emerging adulthood is challenging for a number of reasons. Adult ADHD does not symptomatically present in an identical manner to child and adolescent ADHD. Hyperactive symptoms tend to decrease with age (Nierenberg et al., 2005). As a result, adults with ADHD are less likely to present with externalizing symptoms (i.e., hyperactivity) which makes diagnosis more challenging (Karam et al., 2008) because observable behaviors are more noticeable. Second, diagnosis is complicated by the fact that adult ADHD is often comorbid with other disorders, such as major depressive disorder, generalized anxiety disorder, alcohol and/or substance abuse, bipolar disorder, and a variety of conduct or behavioral disorders. Therefore, many symptoms that indicate ADHD are often mistakenly accounted for by



other psychiatric diagnoses and consequently not fully treated (Fischer et al., 2007; Kessler et al., 2006). Diagnosis of ADHD is further challenged because its adult presentation is similar to the presentation of other disorders commonly diagnosed in emerging adulthood. For example, Klassen, Katzman, and Chokka (2009) describe the subtle differences in the clinical presentation of adult ADHD and bipolar disorder. They note how several symptoms ADHD and bipolar disorder overlap in the DSM-IV (Figure 1; Kent & Craddock, 2003; Wingo & Ghaemi, 2007). However, the one study (Milberger et al., 1995) that did assess whether the high rate of comorbidity was due to symptom overlap, concluded that the overlap in DSM-IV symptoms was not responsible for the high comorbidity between ADHD and bipolar disorder that has been reported in several studies.

Comparing commonly comorbid disorders such as adult ADHD and bipolar disorder is essential for improving differential diagnosis. According to Klassen, Katzman, and Chokka's review, comorbid adult ADHD/bipolar disorder is distinguished by early onset mood disorder, a greater number of mood disorder episodes, and a more severe course of illness. Other factors predisposing comorbidity include lower levels of functioning, fewer partnering attachments, more suicide attempts, and increased legal problems. Thus recognition and aggressive treatment of comorbid ADHD and bipolar disorder in adulthood is essential in these highly affected cases.

Adult ADHD is also commonly comorbid with substance abuse disorder. Moreover, compared to either condition alone, this specific comorbidity indicates increased risk for other disorders as well (Biederman et al., 2005; Wilens et al., 2005). Wilens and colleagues (1997) reported that the onset of substance abuse in individuals with ADHD occurs significantly earlier than control substance abusers. Also, adults with ADHD have longer courses of substance abuse compared to the course of substance abuse in adults who do not have ADHD.

Comorbidities make ADHD not only more difficult to diagnose, but also more complicated to appear. Clinicians no longer question the validity and effectiveness of using stimulants in both pediatric and adult patients to treat Adult ADHD. Based on the current evidence, withholding stimulants to treat ADHD would appear to be a decision based on ideology over data that determines the effectiveness of this treatment. However, this accepted standard practice requires further consideration when substance abuse or bipolar disorder is also present. With regard to co-occurring substance abuse, current evidence indicates that treatment of ADHD with stimulants is associated with reduced risk of substance abuse (Biederman, 2003). Stimulant treatment also appears to be indicated for comorbid adult ADHD/ bipolar disorder. After the stabilization of bipolar disorder, the addition of stimulants further improves the clinical presentation by reducing ADHD symptoms without destabilizing mood (Scheffer et al., 2006).

The clinical dilemma of using medications in substance-abusing adolescents and adults with attention-deficit/hyperactivity disorder remains. What does the literature tell us? Reports indicate that the initial interventions for treating comorbid ADHD/substance abuse disorder must first focus efforts on detoxification; the remission of the substance abuse is targeted next. Following these steps, psychiatric disorder should be addressed; and subsequently, the addition of stimulants for treating ADHD. Planning for an enduring outcome, it is also essential to include psychotherapy and support to facilitate the development of delayed or impaired executive skill functioning.

In conclusion, this paper reviewed current issues relevant to the diagnosis and treatment of ADHD in emerging adulthood. We attempted to emphasize the significance of diagnosing ADHD during these critical years because it has the potential to persist from youth into adulthood without notice. Lack of recognition of this disorder in emerging adulthood will permit functional impairments to persist and reduce quality of life in emerging and later adulthood. ADHD may be difficult to differentially diagnose from bipolar disorder; and it may be over-shadowed when substance abuse is also present. But, treatment of ADHD can reduce the risk of substance abuse and other psychiatric comorbidities. In terms of treatment, it appears unwarranted to withhold stimulants for the treatment of ADHD. And therapeutic support to reduce associated impairments is also recommended to achieve long-term positive outcomes.

Figure 1.

Overlapping and non-overlapping symptoms in ADHD and bipolar disorder. Adapted with permission from Kent & Craddock (2003) and Wingo & Ghaemi (2007).

| <b>ADHD</b>  | <b>Bipolar disorder</b>   |
|--|---|
| <b>Overlapping symptoms</b>  |   |
| 1. Talks excessively   | 1. More talkative than usual  |
| 2. Easily distracted /jumps from one activity to the next              | 2. Distractibility or constant changes in activity or plans.  |
| 3. Difficulty sustaining attention                                     |   |
| 4. Fails to give close attention to details /makes careless mistakes.  |   |
| 5. Fidgets   | 3. Increased activity or physical restlessness  |
| 6. Difficulty remaining seated   |   |
| 7. Runs or climbs about inappropriately                                |   |
| 8. Difficulty engaging in leisure activities quietly                   |   |
| 9. On the go as if driven by a motor                                   |   |
| 10. Interrupts or butts in uninvited                                   | 4. Loss of normal social inhibitions  |
| 11. Blurts out answers before questions have been completed            |   |
| 12. Difficulty awaiting turns  |   |
| <b>Non-overlapping symptoms</b>  |   |
| 13. Forgetful in daily activities                                      | 5. Inflated self-esteem/grandiosity   |
| 14. Difficulty organizing tasks and activities                         | 6. Increase in goal-directed activity   |
| 15. Loses things   | 7. Flight of ideas  |
| 16. Avoids sustained mental effort                                     | 8. Decreased need for sleep   |
| 17. Does not seem to listen when spoken to directly                    | 9. Excessive involvement in pleasurable activities with disregard for potential adverse consequences. |
| 18. Difficulty following through on instructions /fails to finish work |   |





## REFERENCES

- Barkley, R.A., Murphy, K.R., Dupaul, G. I., & Bush, T. (2002). Driving in young adults with attention-deficit/hyperactivity disorder: Knowledge, performance, adverse outcomes, and the role of executive functioning. *Journal of the International Neuropsychology Society*, 8(5), 655–672.
- Biederman, J. (2003). Pharmacotherapy for ADHD decreases the risk for substance abuse: Findings from a longitudinal follow-up of youths with and without ADHD. *Journal of Clinical Psychiatry*, 64(11), 3-8.
- Biederman, J. (2005). Attention-deficit/hyperactivity disorder: A selective overview. *Biological Psychiatry*, 57, 1215–1220.
- Biederman, J., & Faraone, S. V. (2006). The effects of attention-deficit/hyperactivity disorder on employment and household income. *Medscape General Medicine*, 8, 12.
- Fischer, A. G., Bau, C. H. D., Grevet, E. H., Salgado, C. A., Victor, M. M., Kalil, K. L., Sousa, N. O., Garcia, C. R., & Belmonte-de-Abreu, P. (2007). The role of comorbid major depressive disorder in the clinical presentation of adult ADHD. *Journal of Psychiatric Research*, 41, 991–996.
- Karam, R. G., Bau, C. H., Salgado, C. A., Kalil, K. L., Victor, M. M., Sousa, N. O., Vitola, E. S., Picon, F. A., Zeni, G. D., Rohde, L. A., Belmonte-de-Abreu, P., & Grevet, E. H. (2008). Late-onset ADHD in adults: Milder, but still dysfunctional. *Journal of Psychiatric Research*, 43(7), 697-701.
- Kent, L., & Craddock, N. (2003). Is there a relationship between attention deficit hyperactivity disorder and bipolar disorder? *Journal of Affective Disorders*, 73(3), 211-221.
- Kessler, R. C., Berglund, P. A., Demler, O., Jin, R., Merikangas, K. R., Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*, 62(6), 593-602.
- Kessler, R. C., Adler, L., Barkley, R., Biederman, J., Conners, C. K., Demler, O., Faraone, S. V., Greenhill, L. L., Howes, M. J., Secnik, K., Spencer, T., Ustun, T. B., Walters, E. E., & Zaslavsky, A. M. (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.
- Kim-Cohen, J., Caspi, A., Moffit, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry*, 60(7), 709-717.
- Klassen, L. J., Katzman, M. A., & Chokka, P. (2009). Adult ADHD and its comorbidities, with a focus on bipolar disorder. *Journal of Affective Disorders*. doi:10.1016/j.jad.2009.06.036.
- Milberger, S., Biederman, J., Faraone, S. V., Murphy, J., & Tsuang, M. T. (1995). Attention deficit hyperactivity disorder and comorbid disorders: Issues of overlapping symptoms. *American Journal of Psychiatry*, 152, 1793–1799.
- Nierenberg, A. A., Miyahara, S., Spencer, T., Wisniewski, S. R., Otto, M. W., Simon, N., Pollack, M. H., Ostacher, M. J., Yan, L., Siegel, R., Sachs, G. S., & STEP-BD Investigators (2005). Clinical and diagnostic implications of lifetime attention-deficit/hyperactivity disorder comorbidity in adults with bipolar disorder: Data from the first 1000 STEP-BD participants. *Biological Psychiatry*, 57, 1467–1473.
- Tamam, L., Tuñu, C., Karatas, G., & Ozcan, S. (2006). Adult attention-deficit hyperactivity disorder in patients with bipolar I disorder in remission: Preliminary study. *Psychiatry and Clinical Neurosciences*, 60, 480–485.



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Scheffer, R. E., Kowatch, R. A., Carmody, T., & Rush, A. J. (2005). Randomized, placebo-controlled trial of mixed amphetamine salts for symptoms of comorbid ADHD in pediatric bipolar disorder after mood stabilization with divalproex sodium. *American Journal of Psychiatry*, 162, 58–64.

Sobanski, E., Brüggemann, D., Alm, B., Kern, S., Philipsen, A., Schmalzried, H., Hesslinger, B., Waschkowski, H., & Rietschel, M. (2007). Psychiatric comorbidity and functional impairment in a clinically referred sample of adults with attention-deficit/hyperactivity disorder (ADHD). *European Archives of Psychiatry and Clinical Neuroscience*, 257, 371–377.

Weiss, G. (1992). *Child and Adolescent Psychiatric Clinics of North America: Attention-Deficit/Hyperactivity Disorder*. Philadelphia, PA: W.B. Saunders Company.

Wilens, T. E., Niederman, J., & Spencer, T. J. (1997). Case study: Adverse effects of smoking marijuana while receiving tricyclic antidepressants. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 45-48.

Wilens, T. E., Gignac, M., Swezey, A., Monteaux, M. C., & Biederman, J. (2006). Characteristics of adolescents and young adults with ADHD who divert or misuse their prescribed medications. *Journal of the American Academy of Child & Adolescent Psychiatry*, 45(4), 408-414.

Wingo, A. P., & Ghaemi, S. N. (2007). A systematic review of rates and diagnostic validity of comorbid adult attention-deficit/hyperactivity disorder and bipolar disorder. *Journal of Clinical Psychiatry*, 68, 1776-1784.