

# Improving Care for Children With ADHD: The Information is Just a Rating Scale Away

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Attention-deficit/hyperactivity disorder (ADHD) is the most common neurodevelopmental disorder, affecting millions of children, adolescents, and adults in the United States.<sup>1-3</sup> ADHD is associated with a wide range of comorbid conditions and adverse outcomes, including learning and psychiatric disorders, substance abuse, school failure, increased healthcare costs and utilization, and, by young adulthood, significantly increased risk for suicide.<sup>4-8</sup> Furthermore, many children will continue to have ADHD in adulthood, accompanied by high rates of comorbid psychiatric conditions.<sup>4</sup>

Fortunately, despite this worrisome array of adverse outcomes, there are highly effective medical and behavioral treatments that have been shown to be associated with improved outcomes in multiple domains, such as reduced risks for substance use disorders, reduced emergency department visits, and improved school and academic outcomes.<sup>6,9,10</sup> It is therefore a major public health imperative that clinicians provide optimal diagnostic and treatment services for children and adolescents affected by ADHD, including using ADHD-specific rating scales to guide clinical decision-making. The article by Chang et al<sup>11</sup> in this issue of *Pediatrics* provides important information about ADHD rating scales and draws much-needed attention to the critical role that rating scales play in the diagnosis and treatment of childhood ADHD.

To establish a diagnosis of ADHD, it is required that impairing symptoms be present in 2 or more settings.<sup>12</sup> For children, the 2 most important settings are obviously home and school, and the most important observers of child behavior in these settings are parents/guardians and teachers. From a purely practical perspective, the only way to obtain precise information about the symptoms of ADHD from teachers is by using validated ADHD-specific rating scales. The only alternative is for clinicians to communicate directly with teachers, an option that for most clinicians and teachers is simply not possible. In recognition of this reality, the American Academy of Pediatrics ADHD practice guideline explicitly recommends the use of validated ADHD questionnaires for both the initial diagnosis and the monitoring of response to treatment.<sup>13</sup> Unfortunately, as reported in this journal 1 year ago, rating scales are used only about half the time during initial diagnostic assessments and only 7.5% (for teacher rating scales) to 10.8% (for parent rating scales) in the first year after ADHD treatment is initiated by pediatricians to assess response to treatment.<sup>14</sup>

The diagnosis of ADHD is dependent on precise documentation of behavioral symptoms, as well as assessment of the severity of these symptoms. This practical reality will remain until the hoped-for development of biologically based diagnostic tools. The assessment of response to treatment with medications is

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similarly dependent on comparison of symptoms before and after trials of medication. In the absence of questionnaire data, clinicians are forced to rely on incomplete and imprecise information (eg, “Sally’s teacher says things seem to be going a bit better, but not by a whole lot.”). With apologies if the following comparison seems overly dramatic, but diagnosing and treating ADHD without rating scales is comparable to diagnosing childhood diabetes based on the presence of polyuria, and titrating insulin doses based on changes in the severity of polyuria, all without ever measuring blood glucose or hemoglobin A1c levels.

In this context, studies such as that by Chang et al highlight the clinical importance of ADHD rating scales while providing information about several specific scales. The study demonstrates that all of the studied scales (Child Behavior Checklist–Attention Problems and several versions of the Conners Rating Scales) have acceptable sensitivity and specificity as diagnostic tools. The meta-analytic approach employed by the authors is ideally suited to extract clinically useful information from available studies. Nevertheless, the paper also highlights several important issues that remain to be addressed by further studies of ADHD rating scales, including conflicting results of teacher versus parent ratings, gender differences, and assessment of symptoms in younger children.

Of perhaps greater importance is the need to develop, implement, and study electronic approaches to overcome the logistical barriers that often prevent clinicians from employing rating scales to guide their care for children with ADHD. I am sympathetic to the pressure to diagnose and treat ADHD in the absence of rating scale information and fortunate to have access to a new, highly efficient electronic system that has dramatically improved the rate

at which we are able to obtain rating scales results for patients in my own institution.<sup>15</sup> Electronic systems to administer and interpret ADHD rating scales represent the most promising solution to this barrier to optimal treatment of ADHD. It is my sincere hope that the study by Chang et al will help to focus the attention of clinicians on this important issue and promote research aimed at overcoming the barriers that currently prevent us from providing optimal diagnostic and treatment services for children with ADHD.

#### ABBREVIATION

ADHD: attention-deficit/hyperactivity disorder

#### REFERENCES

1. Barbaresi W, Katusic S, Colligan R, et al. How common is attention-deficit/hyperactivity disorder? Towards resolution of the controversy: results from a population-based study. *Acta Paediatr Suppl.* 2004;93(445):55–59
2. Froehlich TE, Lanphear BP, Epstein JN, Barbaresi WJ, Katusic SK, Kahn RS. Prevalence, recognition, and treatment of attention-deficit/hyperactivity disorder in a national sample of US children. *Arch Pediatr Adolesc Med.* 2007;161(9):857–864
3. Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. *Am J Psychiatry.* 2006;163(4):716–723
4. Barbaresi WJ, Colligan RC, Weaver AL, Voigt RG, Killian JM, Katusic SK. Mortality, ADHD, and psychosocial adversity in adults with childhood ADHD: a prospective study. *Pediatrics.* 2013;131(4):637–644
5. Barbaresi WJ, Katusic SK, Colligan RC, Weaver AL, Jacobsen SJ. Long-term school outcomes for children with attention-deficit/hyperactivity disorder:

- a population-based perspective. *J Dev Behav Pediatr.* 2007;28(4):265–273
6. Katusic SK, Barbaresi WJ, Colligan RC, Weaver AL, Leibson CL, Jacobsen SJ. Psychostimulant treatment and risk for substance abuse among young adults with a history of attention-deficit/hyperactivity disorder: a population-based, birth cohort study. *J Child Adolesc Psychopharmacol.* 2005;15(5):764–776
7. Leibson CL, Katusic SK, Barbaresi WJ, Ransom J, O’Brien PC. Use and costs of medical care for children and adolescents with and without attention-deficit/hyperactivity disorder. *JAMA.* 2001;285(1):60–66
8. Yoshimasu K, Barbaresi WJ, Colligan RC, et al. Childhood ADHD is strongly associated with a broad range of psychiatric disorders during adolescence: a population-based birth cohort study. *J Child Psychol Psychiatry.* 2012;53(10):1036–1043
9. Barbaresi WJ, Katusic SK, Colligan RC, Weaver AL, Jacobsen SJ. Modifiers of long-term school outcomes for children with attention-deficit/hyperactivity disorder: does treatment with stimulant medication make a difference? Results from a population-based study. *J Dev Behav Pediatr.* 2007;28(4):274–287
10. Leibson CL, Barbaresi WJ, Ransom J, et al. Emergency department use and costs for youth with attention-deficit/hyperactivity disorder: associations with stimulant treatment. *Ambul Pediatr.* 2006;6(1):45–53
11. Chang LY, Wang MY, Tsai PS. Diagnostic accuracy of rating scales for attention-deficit/hyperactivity disorder: a meta-analysis. *Pediatrics.* 2016;137(3):e20152749
12. American Psychiatric Association. *American Psychiatric Association. DSM-5 Task Force. Diagnostic and statistical manual of mental disorders: DSM-5*, 5th ed. Washington, D.C.: American Psychiatric Association; 2013
13. Subcommittee on Attention-Deficit/Hyperactivity Disorder; Steering Committee on Quality Improvement and Management; Wolraich M, Brown L, Brown RT, et al. ADHD: clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in

children and adolescents. *Pediatrics*. 2011;128(5):1007–1022

in community-based pediatrics. *Pediatrics*. 2014;134(6):1136–1143

data system improves long-term monitoring of patients with ADHD. Paper presented at: 2015 Pediatric Academic Societies Annual Meeting; April 25–28, 2015; San Diego, CA.

14. Epstein JN, Kelleher KJ, Baum R, et al. Variability in ADHD care

15. Chan EWS, Sachedeva S, Fleeegler E. Implementing an internet-based

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