

FPIN's Help Desk Answers

Attention-Deficit/Hyperactivity Disorder: Screening and Evaluation

Payal Gaba, MD, Kadlec Family Medicine Residency, Richland, Washington

Matthew Giordanengo, DO, Montana Family Medicine Residency, Billings, Montana

Clinical Question

What are the best screening tools for the evaluation and diagnosis of attention-deficit/hyperactivity disorder (ADHD)?

Evidence-Based Answer

The Conners Abbreviated Symptom Questionnaire has the best combination of positive and negative likelihood ratios (*eTable A*). (Strength of Recommendation [SOR]: B, based on a meta-analysis of observational studies.) The Vanderbilt ADHD Diagnostic Teacher and Parent Rating Scales also have moderate sensitivity and specificity in elementary school-aged children. (SOR: B, based on a single cohort study.)

Evidence Summary

A 2016 meta-analysis of 25 cross-sectional, cohort, and case-control studies evaluated the accuracy of the Child Behavior Checklist-Attention Problem Scale (CBCL-AP) and three versions of the Conners Rating Scales-Revised (CRS-R) for diagnosing ADHD in children and adolescents three to 18 years of age.¹ Patients had all three types of ADHD: predominantly hyperactive/impulsive, predominantly inattentive, and combined. In addition to the CBCL-AP (14 studies) and the three versions of the CRS-R, the Conners Parent Rating Scale-Revised short form (four studies), the Conners Teacher Rating Scale-Revised short form (five studies), and the Conners Abbreviated Symptom Questionnaire (five studies) were evaluated. The reference standard was a clinical examination performed by a qualified professional using diagnostic criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (DSM),

3rd or 4th ed., and corresponding diagnosis codes from the *International Classification of Diseases*, 9th or 10th revision. All scales had moderate sensitivity, specificity, and positive and negative likelihood ratios for diagnosing ADHD. The Conners Abbreviated Symptom Questionnaire may be the most effective diagnostic tool for ADHD because of its brevity and high diagnostic accuracy, and the CBCL-AP could be used for more comprehensive assessments.

A 2013 cohort study compared the Vanderbilt ADHD Diagnostic Parent/Teacher Rating Scales with a structured diagnostic psychiatric interview using DSM-IV criteria.^{2,3} Participants were selected from a random sample of elementary school students in urban, suburban, and rural school districts in Oklahoma. The Vanderbilt parent and teacher scales were moderately sensitive and specific for diagnosing ADHD.

Copyright © Family Physicians Inquiries Network. Used with permission.

Address correspondence to Payal Gaba, MD, at payal.gaba@kadlec.org. Reprints are not available from the authors.

References

1. Chang LY, Wang MY, Tsai PS. Diagnostic accuracy of rating scales for attention-deficit/hyperactivity disorder: a meta-analysis. *Pediatrics*. 2016;137(3):e20152749.
2. Bard DE, Wolraich ML, Neas B, Doffing M, Beck L. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic parent rating scale in a community population. *J Dev Behav Pediatr*. 2013;34(2):72-82.
3. Wolraich ML, Bard DE, Neas B, Doffing M, Beck L. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic teacher rating scale in a community population. *J Dev Behav Pediatr*. 2013;34(2):83-93. ■

Additional content at <https://www.aafp.org/afp/2019/0601/p712.html>.

Help Desk Answers provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (<http://www.cebm.net>).

The complete database of evidence-based questions and answers is copyrighted by FPIN. If interested in submitting questions or writing answers for this series, go to <http://www.fpin.org> or e-mail: questions@fpin.org.

This series is coordinated by John E. Delzell Jr., MD, MSPH, Associate Medical Editor.

A collection of FPIN's Help Desk Answers published in *AFP* is available at <https://www.aafp.org/afp/hda>.

Author disclosure: No relevant financial affiliations.

eTABLE A

Diagnostic Accuracy of Tests for Attention-Deficit/Hyperactivity Disorder

Test	Studies	Participants	Sensitivity (95% CI)	Specificity (95% CI)	Positive LR	Negative LR
Child Behavior Checklist–Attention Problems Scale	14	3,296	77% (69% to 84%)	73% (64% to 81%)	2.9	0.3
Conners Parent Rating Scale–Revised short form	4	596	75% (64% to 84%)	75% (64% to 84%)	3.0	0.3
Conners Teacher Rating Scale–Revised short form	5	733	72% (63% to 79%)	84% (69% to 93%)	4.6	0.3
Conners Abbreviated Symptom Questionnaire	5	972	83% (59% to 95%)	84% (68% to 93%)	5.3	0.2
Vanderbilt ADHD Diagnostic Parent Rating Scale	1	560	80% (71% to 87%)	75% (66% to 83%)	3.2	0.3
Vanderbilt ADHD Diagnostic Teacher Rating Scale	1	370	69% (43% to 87%)	84% (78% to 89%)	4.3	0.4

ADHD = attention-deficit/hyperactivity disorder; LR = likelihood ratio.

Information from:

Bard DE, Wolraich ML, Neas B, Doffing M, Beck L. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic parent rating scale in a community population. *J Dev Behav Pediatr.* 2013;34(2):72-82.

Chang LY, Wang MY, Tsai PS. Diagnostic accuracy of rating scales for attention-deficit/hyperactivity disorder: a meta-analysis. *Pediatrics.* 2016;137(3):e20152749.

Wolraich ML, Bard DE, Neas B, Doffing M, Beck L. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic teacher rating scale in a community population. *J Dev Behav Pediatr.* 2013;34(2):83-93.