The World Health Organization Adult Attention-Deficit/Hyperactivity Disorder Self-Report Screening Scale for DSM-5

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Abstract

Importance
Recognition that adult attention-deficit/hyperactivity disorder (ADHD) is common, seriously impairing, and usually undiagnosed has led to the development of adult ADHD screening scales for use in community, workplace, and primary care settings. However, these scales are all calibrated to DSM-IV criteria, which are narrower than the recently developed DSM-5 criteria.

Objectives
To update for DSM-5 criteria and improve the operating characteristics of the widely used World Health Organization Adult ADHD Self-Report Scale (ASRS) for screening.

Design, Setting, and Participants
Probability subsamples of participants in 2 general population surveys (2001-2003 household survey [n = 119] and 2004-2005 managed care subscriber survey [n = 218]) who completed the full 29-question self-report ASRS, with both subsamples over-sampling ASRS-screened positives, were blindly administered a semistructured research diagnostic interview for DSM-5 adult ADHD. In 2016, the Risk-Calibrated Supersparse Linear Integer Model, a novel machine-learning algorithm designed to create screening scales with optimal integer weights and limited numbers of screening questions, was applied to the pooled data to create a DSM-5 version of the ASRS screening scale. The accuracy of the new scale was then confirmed in an independent 2011-2012 clinical sample of patients seeking evaluation at the New York University Langone Medical Center Adult ADHD Program (NYU Langone) and 2015-2016 primary care controls (n = 300). Data analysis was conducted from April 4, 2016, to September 22, 2016.

Main Outcomes and Measures
The sensitivity, specificity, area under the curve (AUC), and positive predictive value (PPV) of the revised ASRS.

Results
Of the total 637 participants, 44 (37.0%) household survey respondents, 51 (23.4%) managed care respondents, and 173 (57.7%) NYU Langone respondents met DSM-5 criteria for adult ADHD in the semistructured diagnostic interview. Of the respondents who met DSM-5 criteria for adult ADHD, 123 were male (45.9%); mean (SD) age was 33.1 (11.4) years. A 6-question screening scale was found to be optimal in distinguishing cases from noncases in the first 2 samples. Operating characteristics were excellent at the diagnostic threshold in the weighted (to the 8.2% DSM-5/Adult ADHD Clinical Diagnostic Scale population prevalence) data (sensitivity, 91.4%; specificity, 96.0%; AUC, 0.94; PPV, 67.3%). Operating characteristics were similar despite a much higher prevalence (57.7%) when the scale was applied to the NYU Langone clinical sample (sensitivity, 91.9%; specificity, 74.0%; AUC, 0.83; PPV, 82.8%).

Conclusions and Relevance
The new ADHD screening scale is short, easily scored, detects the vast majority of general population cases at a threshold that also has high specificity and PPV, and could be used as a screening tool in specialty treatment settings.