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ADHD: SCREENING, ASSESSMENT, AND TREATMENT MONITORING

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GENERAL DISCLOSURES

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DISCLOSURE OF POTENTIAL CONFLICTS

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OBJECTIVES

1. At participating in this program, learners will be able to describe the strengths and limitations of screening tools to identify ADHD
2. At participating in this program, learners will be able to describe the general components of a comprehensive assessment for ADHD
3. At participating in this program, learners will be able several key aspects to successfully monitoring ADHD treatment response

ADHD AS A SOURCE OF CONTROVERSY...

- NY Times search of “ADHD”:
 - Thousands of Toddlers are Medicated for ADHD (May 2014)
 - Reports Says Medications Use is Rising for Adults with ADHD (May 2014)
 - Expand Pre-K, Not ADHD (February 2014)
 - Untangling the Myths About Attention Disorder (March 2016)

Other media:

Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder by Richard Louv (2008)

CAN OVER-STIMULATION (E.G., EXPOSURE TO RAPIDLY PACED TELEVISION PROGRAMS IN THE FIRST 3 YEARS OF LIFE) INCREASE THE RISK OF ATTENTIONAL DEFICITS AT SCHOOL AGE?

Opinion

VIEWPOINT

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Rethinking Attention-Deficit/Hyperactivity Disorder

The prevalence of attention-deficit/hyperactivity disorder (ADHD) has increased substantially over the past 20 years: by some estimates, as much as 30%.¹ Much like the rise in autism prevalence, the reasons for this are likely multifactorial, including an actual rise in incidence as well as increased recognition and diagnosis. The deficits seen in children with ADHD include impulsivity and inattention, and these salient features are part of what those of us researching cognition consider "executive function."

testing for ADHD, we dichotomize a continuous variable: we draw a line at some point on that curve, typically at the 95th percentile, and define that as what distinguishes pathology from normalcy. In the case of ADHD, a clinician performs a series of assessments by having parents and teachers report their observations of the child on a standardized form. In one of the most widely used and well-validated measures of ADHD, a child needs to demonstrate 6 of 9 specific behaviors to be diagnosed as having ADHD.⁴ Each of those behav-

Should We Be Thinking of Adult ADHD By Comparing It to Type-2 Diabetes?

Is Adult ADHD a Childhood-Onset Neurodevelopmental Disorder? Evidence From a Four-Decade Longitudinal Cohort Study

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Objective: Despite a prevailing assumption that adult ADHD is a childhood-onset neurodevelopmental disorder, no prospective longitudinal study has described the childhoods of the adult ADHD population. The authors report follow-back analyses of ADHD cases diagnosed in adulthood, alongside follow-forward analyses of ADHD cases diagnosed in childhood, in one cohort.

Method: Participants belonged to a representative birth cohort of 1,037 individuals born in Dunedin, New Zealand, in 1972 and 1973 and followed to age 38, with 95% retention. Symptoms of ADHD, associated clinical features, comorbid disorders, neuropsychological deficits, genome-wide association study-derived polygenic risk, and life impairment indicators were assessed. Data sources were participants, parents, teachers, informants, neuropsychological test results, and administrative records. Adult ADHD diagnoses used DSM-5 criteria, apart from onset age and cross-setting corroboration, which were study outcome measures.

Results: As expected, childhood ADHD had a prevalence of 6% (predominantly male) and was associated with childhood

comorbid disorders, neurocognitive deficits, polygenic risk, and residual adult life impairment. Also as expected, adult ADHD had a prevalence of 3% (gender balanced) and was associated with adult substance dependence, adult life impairment, and treatment contact. Unexpectedly, the childhood ADHD and adult ADHD groups comprised virtually nonoverlapping sets; 90% of adult ADHD cases lacked a history of childhood ADHD. Also unexpectedly, the adult ADHD group did not show tested neuropsychological deficits in childhood or adulthood, nor did they show polygenic risk for childhood ADHD.

Conclusions: The findings raise the possibility that adults presenting with the ADHD symptom picture may not have a childhood-onset neurodevelopmental disorder. If this finding is replicated, then the disorder's place in the classification system must be reconsidered, and research must investigate the etiology of adult ADHD.

Am J Psychiatry 2015; 172:967–977; doi: 10.1176/appi.ajp.2015.14101266

PREVALENCE AND PROGNOSIS

- Prevalence 6-9% (2x boys); 4-5% in adults
- Adult prevalence approximately ½ of youth prevalence
- Many will have symptoms persisting into adulthood.
 - As many as 90% will still have some symptoms of ADHD, not necessarily meeting strict diagnostic criteria.
- Long-term consequences of ADHD:
 - Higher rates of traffic and other accidents, marital difficulties, unemployment, antisocial and criminal behavior, and obesity.
 - Lower household income attained
 - Higher rates of attempted and completed suicide

Pliszka S. AACAP Work Group on Quality Issues. Practice Parameter. J. Am. Acad. Child Adolesc. Psychiatry 2007; 46(7):894-921.
Fliers et al. ADHD Is a Risk Factor for Overweight and Obesity in Children; J Develop & Behavior Peds 2013; 34:566-574. Ljung et al. ADHD and Suicidal Behavior; JAMA Psychiatry 2014; 71(8):958-964.

DSM-5 DIAGNOSTIC CRITERIA AND THE FUNCTION OF SCREENING TOOLS

DIAGNOSIS

- Before 12 yo (versus prior to age 7 in DSM-IV)
- 6 months duration
- 2 or more settings
- **Clinically significant impairment**
- Not explained by other disorder
- 6 symptoms of inattention or hyperactivity or both
 - Other DSM-5 updates: 5 symptoms for adults, examples included to facilitate diagnoses across the life span, cross-situational requirement strengthened to include several symptoms in each setting, subtypes replaced with specifiers (which map to previous subtypes), autism is no longer an exclusionary comorbid diagnosis

<http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#>.

Accessed 4/25/12.

INATTENTION

- Lacks attention to detail/careless mistakes
- Difficulty sustaining attention
- Does not seem to listen when spoken to
- Poor follow through
- Difficulty with organization
- Avoids tasks requiring sustained mental effort
- Loses things
- Easily distracted
- Forgetful

<http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#>.
Accessed 4/25/12.

HYPERACTIVITY/IMPULSIVITY

- Blurts out answers before question completed
- Runs/climbs excessively (restless in adolescents)
- Difficulty staying in seat
- Difficulty engaging in quiet activities
- “On the go”
- Talks excessively
- Interrupts
- Difficulty awaiting turn
- Fidgets

<http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#>.

Accessed 4/25/12.



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SCHOOL-AGE VERSUS ADOLESCENT ADHD

Table 1. Classic Presenting Features of Attention-Deficit/Hyperactivity Disorder in School-Aged vs Adolescent Populations⁵⁻⁷

Symptom	School-Aged Children	Adolescents and Adults
Inattention	<ul style="list-style-type: none"> • Difficulty sustaining attention (except to video games) • Does not listen • Difficulty following multistep directions • Loses things, such as school materials, has a messy locker, book bag, or desk • Easily distracted or forgetful 	<ul style="list-style-type: none"> • Difficulty sustaining attention to reading or paperwork • Poor level of concentration • Difficulty finishing tasks • Misplaces things, such as wallets, keys, or mobile telephones, has poor time management, works twice as hard for half as much • Easily distracted or forgetful; may seem scattered at home or work
Hyperactive-impulsive	<ul style="list-style-type: none"> • Squirms and fidgets • Runs or climbs excessively • Cannot play or work quietly • Talks excessively • On the go, driven by "a motor" • Blurts out answers • Cannot wait his/her turn • Intrudes on or interrupts others 	<ul style="list-style-type: none"> • Inner restlessness • Fidgets when seated (eg, drums fingers, taps foot, flips pens) • Easily overwhelmed • Talks excessively • Self-selects active jobs or activities • Makes impulsive decisions • Drives too fast, takes impulsive risks • Often irritable or quick to anger
Dysfunction at school	<ul style="list-style-type: none"> • Difficulty sitting still • Easily overwhelmed • Easily bored • Speaks out in class 	<ul style="list-style-type: none"> • Teachers complain about inattention, lack of motivation, or being overly social • Procrastination • Missing assignments, poor test grades • Grades fall and avoids or cuts class or school

TOOLS TO DISTINGUISH ADULT ADHD FROM OTHER DISORDERS

Diagnosis	Key Questions	Differentiating Symptom	Behavioral Health Measure
ADHD	Do you struggle with impulsivity, hyperactivity, or problems with attention?	Poor focus	ASRS v1.1
Major Depressive Disorder	Have you been feeling depressed or having difficulty enjoying things in your life?	Low mood or anhedonia	PHQ-9
Bipolar Disorder: Hypomania or Mania	Do you have periods of time with much less sleep than usual and not really missing it the next day?	Decreased need for sleep	MDQ CIDI-3
Generalized Anxiety Disorder	Have you been worrying excessively for greater than six months? Are you a worrier?	Worry	GAD-7
Obsessive Compulsive Disorder	Do you have any repetitive thoughts or behaviors that bother you?	Repetitive thoughts or behaviors	Yale Obsessive Compulsive Checklist (Y-BOC)
Learning Disabilities	Do you have a history of poor academic performance in any specific domain?	Failure to acquire reading, writing or math skills at age expected levels	No measure available (consider psychometric or neuropsychological testing)
Anti-social Personality Disorder	Do you have a history of frequent fights, stealing, vandalism or other legal problems?	General disregard for and violation of the rights of others	No measure available
Trauma and PTSD	Do you have a history of trauma or abuse with nightmares and flashbacks?	Recurring traumatic memories, hyperarousal, and avoidance behaviors	PCL-C

Other disorders to consider: Mental retardation, Traumatic Brain Injury, Delirium, Dementia, Malingering

TOOLS TO DISTINGUISH CHILDHOOD ONSET ADHD FROM OTHER DISORDERS

Diagnosis	Key Questions	Differentiating Symptom	Behavioral Health Measure
ADHD	Does your child struggle with impulsivity, hyperactivity, or problems with attention?	Poor focus	Connors Early Childhood (ages 2-6) Connors 3 (ages 6-18); Vanderbilt (non-proprietary, ages 6-12)
Oppositional Defiant Disorder	Does your child often lose his or her temper, argue or behave defiantly with adults, or become resentful or vindictive when things do not go his or her way?	Context dependent emotional and behavioral reactivity	Child Behavior Check List (CBCL)
Conduct Disorder	Does your child have a history of being aggression to people or animals, destroying property, stealing, or staying out all night?	General disregard for and violation of the rights of others	CBCL
Trauma and PTSD	Does your child have a history of severe neglect, maltreatment, trauma or prolonged exposure to psychosocial adversity?	Recurring traumatic memories, hyperarousal, and avoidance behaviors	UCLA PTSD Index Trauma Screen, PCL-C
Autism Spectrum Disorders	Does your child have poor social skills and a narrow range of interests?	Impaired social communication along with restricted interests and repetitive behaviors	Social Communication Questionnaire (SCQ)
Other disorders to consider: Mental retardation, Traumatic Brain Injury			

SYMPTOM ASSESSMENT SCALES

Scale	Description/ Features/ Comments	Scale available from:
Adult Self-Report Scale	ADHD DSM items reworded for adults; screener + 18 item; frequency rating	www.med.nyu.edu/Psych/training/adhd.html and the WHO website
Conners Adult ADHD Rating Scale (CAARS)	Large item set of developmentally relevant items; DSM subscale maps onto diagnosis; self- and other-report forms	Multi Health Systems, Inc.
Wender-Reimherr Adult Attention Deficit Disorder Scale	Retrospective symptom scales provide age of onset data; less clearly tied to DSM-IV ADHD.	Fred W. Reimherr, MD, Salt Lake City,
Barkley Adult ADHD Rating Scale-IV (BAARS-IV)	Dimensional scale; uses actual DSM items but not re-worked for adults; behavior in past 6 mos; self and other informant.	russellbarkley.org
Brown ADD Scale	Rates inattention/executive dysfunction; items extend beyond DSM definition of ADHD; good for high functioning adults with inattentive subtype	The Psychological Corporation
Adult Investigator Symptom Report Scale (AISRS)	Interviewer administered scale; 18 DSM-IV ADHD criteria worded for adults with prompts.	Lenard Adler, MD adultADHD@med.nyu.edu
Adult Symptom and Role Impairment Inventories	Self, Informant, & Clinician Inventories with prompts for DSM diagnosis.	www.DrSurman.org Surman, Editor: ADHD in Adults in Adults: A Practical Guide to Evaluation and Management

ADULT SCREENING TOOL EXAMPLE

Screening Adults for ADHD

- **The first 6 questions from the Adult ADHD Self-Report Scale (ASRS) correlate highly with diagnosis of ADHD.**
- **Individuals who note 4 or more of these symptoms at the shaded frequency levels should undergo a comprehensive assessment for ADHD**

Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

Patient Name	Today's Date						
Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.			Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?							
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?							
3. How often do you have problems remembering appointments or obligations?							
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?							
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?							
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?							

ACCURATE DIAGNOSES AND THE ROLE OF RATING SCALES

- Over-reliance on parent- and teacher-completed rating scales during the assessment process may lead to inaccurate diagnoses
- ADHD rating scales have only moderate sensitivity while their specificity ranges from low to moderate.
- Additionally, there is often poor agreement between parent and teacher responses. With these limitations in mind, it is important to remember that rating scales are best used as screening tools and to measure treatment response.
- Rating scales are best used as screening tools and to measure treatment response

CENTRAL ROLE OF IMPAIRMENT IN ASSESSMENT AND TREATMENT

- **Impairment**--that is, problems in daily life functioning that result from symptoms (rather than symptoms themselves) are what should be targeted in treatment
- **Assessment of impairment** in daily life functioning is a fundamental aspect of **initial evaluation**
- **Ongoing assessment** of impairment in critical domains is necessary to determine the impact of and need for modifications in treatment
- Normalization or **minimization of impairment** in daily life functioning is the **goal of treatment**

QUESTIONS TO HELP ELICIT IMPAIRMENT

- Evaluate the burden of symptoms
 - Does it show up differently in roles or contexts?
 - Is it an effort to compensate for?
- Consider impairment relative to potential
 - How would individual function if symptoms resolved?
- Is there mismatch with role/environment?
 - Would change in role or environment remedy?
- Is concern exaggerated?
 - Unrealistic parental or individual expectations / perfectionistic / inaccurate self-evaluation

SUMMARY OF KEY ADHD SCREENING POINTS

- ADHD is both underdiagnosed and over-diagnosed in different populations and should be routinely screened for during regular office visits, especially if there are concerns for poor concentration and functional achievement below expected potential
- Adults with concerns for ADHD may not have been diagnosed as children and may present with different complaints/symptoms
- Often exists with other co-morbid illnesses but symptoms may also represent a ADHD “mimic;” both should be screened for
- Secondary gain may play a part in diagnostic picture
- Determining level of functional impairment is critical

BEYOND SCREENING TOOLS: ADDITIONAL WORKUP CONSIDERATIONS

WORK-UP

- In general, no testing or imaging is indicated.
- Clinical diagnosis
 - But some soft physical signs may be present, such as motor overflow and clumsiness.
- Rating scales can help elicit symptoms.
- Comparison to peers
 - Inattention/hyperactivity *common* in preschoolers.
- Response to stimulants is not unique to individuals with ADHD.
- Consider psychological or neuropsychological testing if low cognitive ability or achievement relative to ability.

Pliszka S. AACAP Work Group on Quality Issues. Practice Parameter. J. Am. Acad. Child Adolesc. Psychiatry 2007; 46(7):894-921.

WORK-UP

- If other symptoms present, consider
 - Lead
 - Thyroid and other endocrine (eg, low testosterone in adults)
 - Seizures
 - OSA
 - Anemia
 - Trauma
 - Substance abuse
 - Sensory impairment
 - Brain injury
 - Genetic syndrome
- Medication side effects may mimic ADHD.
 - Bronchodilators
 - Corticosteroids
 - Antihistamines
 - Antipsychotics

COMORBIDITY VS. ADHD MIMICS

PSYCHIATRIC MIMICS

- Autism Spectrum Disorder
- Intellectual Disability (not obvious)
- Depression (not comorbid)
- Anxiety and OCD
- Bipolar disorder (especially in adults)
- Eating Disorder
- Adjustment disorders
- ADHD personality (symptoms without impairment)
- Stimulant seeking (abuse, anorexia)
- Other substance abuse

OTHER FACTORS

- Poor fit between temperament, environment, and expectations
- Mercer Island ADHD
- Marital dissatisfaction and other stressors
- Chaotic environments
- Fad?
- Excuse?

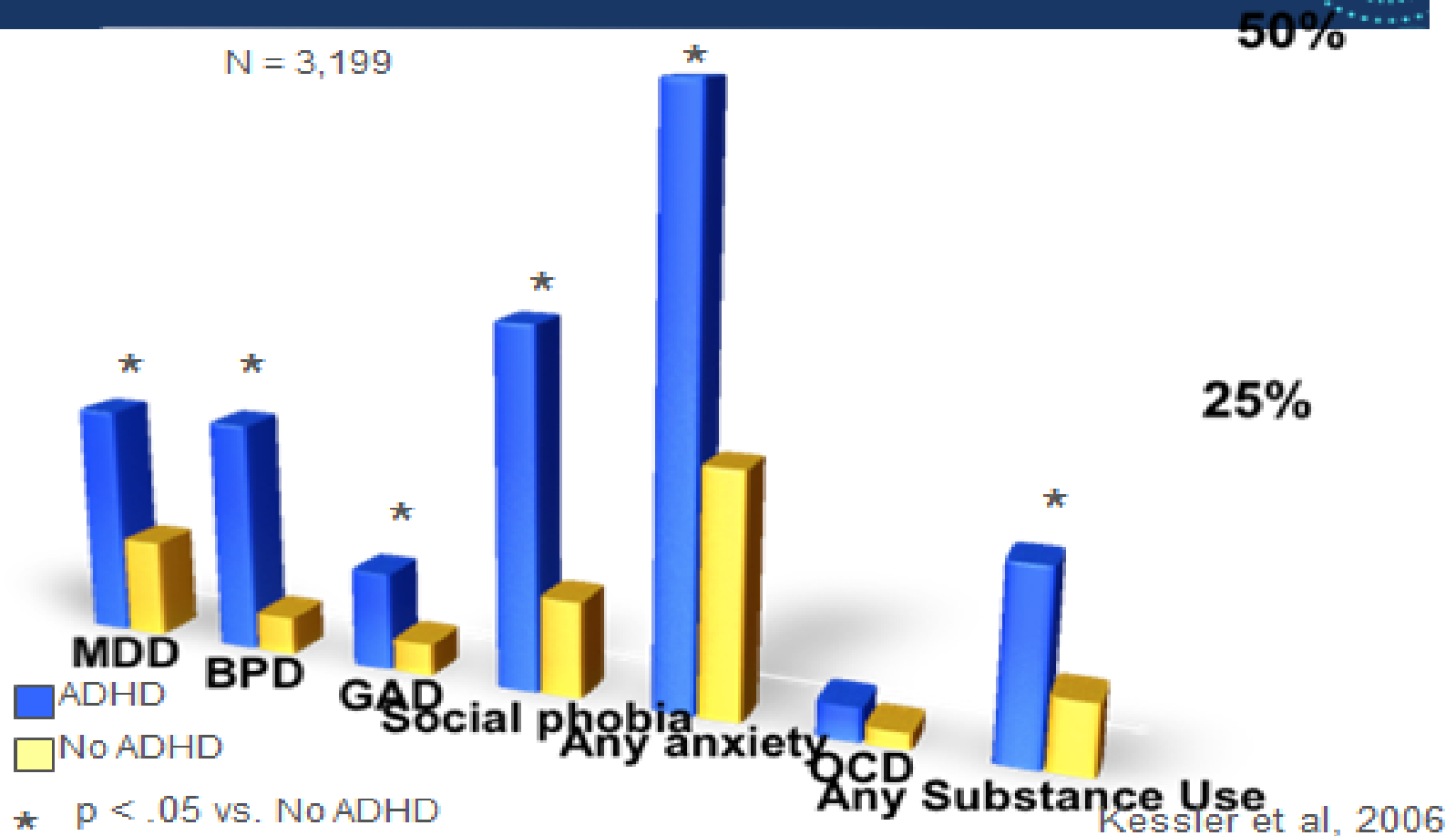
COMMON CHILDHOOD COMORBIDITIES

- Language or Learning problem (25-35%)
- ODD (55-85%)
- Substance abuse (20-40%)
- Conduct (10-20%)
- Anxiety (33%)
- Tic disorder (50%)
- Mood disorders
- Sleep problems

Pliszka S. AACAP Work Group on Quality Issues. Practice Parameter. J. Am. Acad. Child Adolesc. Psychiatry 2007; 46(7):894-921.

ADULT COMORBIDITIES ARE COMMON AS WELL

12 Month Comorbidity: 18 - 44 Year Old Adults



ADHD AND COMPLETED SUICIDE IN SCHOOL-AGED CHILDREN: A CONNECTION?

Suicide in Elementary School-Aged Children and Early Adolescents

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abstract

BACKGROUND AND OBJECTIVES: Suicide in elementary school-aged children is not well studied, despite a recent increase in the suicide rate among US black children. The objectives of this study were to describe characteristics and precipitating circumstances of suicide in elementary school-aged children relative to early adolescent decedents and identify potential within-group racial differences.

METHODS: We analyzed National Violent Death Reporting System (NVDRS) surveillance data capturing suicide deaths from 2003 to 2012 for 17 US states. Participants included all suicide decedents aged 5 to 14 years ($N = 693$). Age group comparisons (5–11 years and 12–14 years) were conducted by using the χ^2 test or Fisher's exact test, as appropriate.

RESULTS: Compared with early adolescents who died by suicide, children who died by suicide were more commonly male, black, died by hanging/strangulation/suffocation, and died at home. Children who died by suicide more often experienced relationship problems with family members/friends (60.3% vs 46.0%; $P = .02$) and less often experienced boyfriend/girlfriend problems (0% vs 16.0%; $P < .001$) or left a suicide note (7.7% vs 30.2%; $P < .001$). Among suicide decedents with known mental health problems ($n = 210$), childhood decedents more often experienced attention-deficit disorder with or without hyperactivity (59.3% vs 29.0%; $P = .002$) and less often experienced depression/dysthymia (33.3% vs 65.6%; $P = .001$) compared with early adolescent decedents.

CONCLUSIONS: These findings raise questions about impulsive responding to psychosocial adversity in younger suicide decedents, and they suggest a need for both common and developmentally-specific suicide prevention strategies during the elementary school-aged and early adolescent years. Further research should investigate factors associated with the recent increase in suicide rates among black children.

ADHD AND SUBSTANCE ABUSE

- ADHD diagnosis increases the risk of substance use and nicotine dependence.
- Early stimulant treatment may reduce or delay the onset of substance use disorder.
 - Recent follow up data from the MTA revealed no harm or benefit from medication treatment in regard to rates of adolescent substance abuse.

Charach A, et al. Childhood attention-deficit/hyperactivity disorder and future substance use disorders: comparative meta-analyses. *J Am Acad Child Adolesc Psychiatry* 2011; 50:9–21. Wilens TE et al. Effect of prior stimulant treatment for attention-deficit/hyperactivity disorder on subsequent risk for cigarette smoking and alcohol and drug use disorders in adolescents. *Arch Pediatr Adolesc Med* 2008; 162:916–921; Molina Et al. Adolescent Substance Use in the Multimodal Treatment Study of Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry* 2013; 52: 251-263.

ADHD AND SUBSTANCE ABUSE

- Stimulant misuse rates of 5-9% for grade school and high school (and 5-35% in college-age individuals)
- Consider longer-acting formulations, lisdexamfetamine, and atomoxetine.
- ADHD medications used for adolescents with active substance abuse are not as effective.

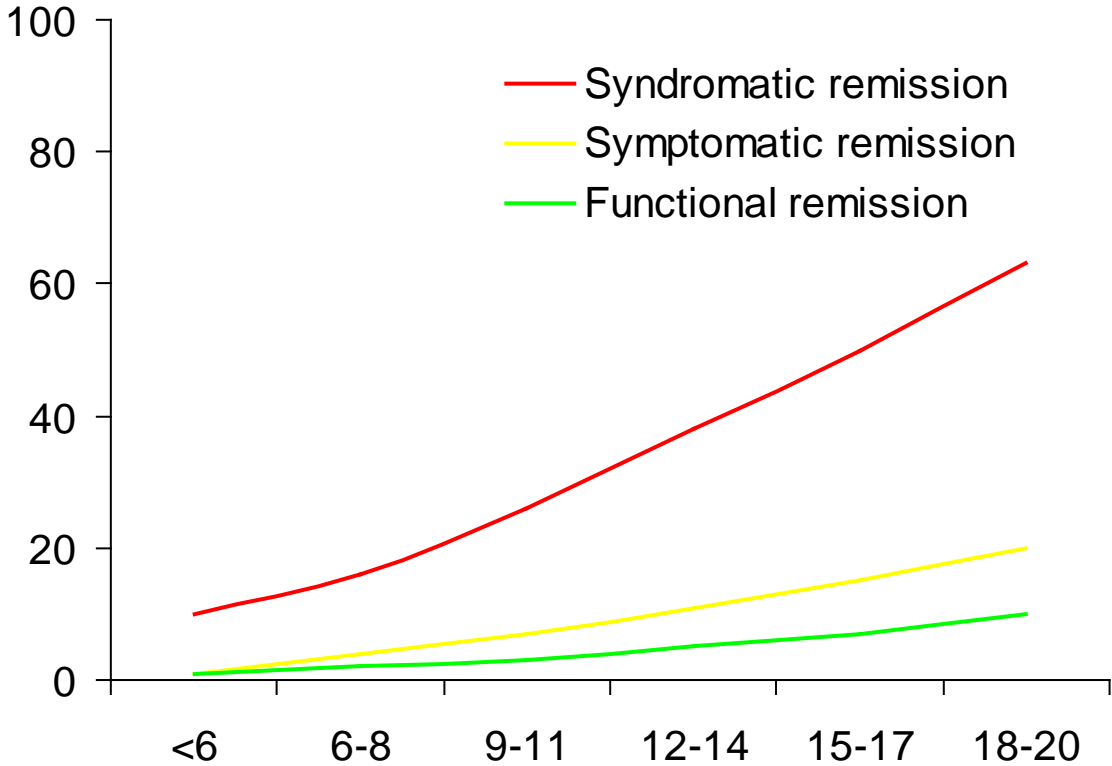
Wilens TE, Adler LA, Adamson J, et al. Misuse and diversion of stimulants prescribed for ADHD: a systematic review of the literature. *J Am Acad Child Adolesc Psychiatry* 2008; 47:21–31.

TREATMENT MONITORING

TREATMENT MONITORING

- Symptoms may improve over time but oftentimes impairment persists even if attenuated
- Medication non-compliance is common; monitor for abuse and/or diversion
- Consider use of long-acting stimulants and/or non-stimulants for patients with substance abuse histories.
- Important to follow consensus guidelines, including frequent use of follow-up rating scales
- Help patients develop clear treatment goals so that expectations are reasonable and functional improvement can be measured
- Collect collateral data both during diagnostic phase and during outcome monitoring

AGE-DEPENDENT DECLINE OF ADHD SYMPTOMS



VARIABILITY IN ADHD CARE IN COMMUNITY-BASED PEDIATRICS

- 93% received medication, 13% received psychosocial treatment
- Half using rating scales during assessment
- Variability at patient but also practice level
- “Almost no ADHD care follows ADHD consensus guideline recommendations for treatment”
- “the proportion of children receiving psychosocial treatment was miniscule”

ARTICLE

Variability in ADHD Care in Community-Based Pediatrics

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KEY WORDS

attention deficit and disruptive behavior disorders, pediatrics, behavioral medicine, guidelines, quality

ABBREVIATIONS

AAP—American Academy of Pediatrics
ADHD—attention deficit/hyperactivity disorder
DSM-IV—Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
EHR—electronic health record

Dr Epstein contributed to the conceptualization and the design of the study, and drafted the initial manuscript; Drs Kelleher, Baum, Brinkman, Lichtenstein, and Langberg contributed to the conceptualization and the design of the study, and reviewed and revised the manuscript; Drs Pough and Gardner carried out the initial analysis, and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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WHAT'S KNOWN ON THIS SUBJECT: In 2000/2001, the American Academy of Pediatrics published recommendations for attention-deficit/hyperactivity disorder (ADHD) care. According to pediatricians' self-report of adoption of these guidelines, community-based ADHD care appears to be marginally adequate.

WHAT THIS STUDY ADDS: Using reviews of >1500 patient charts, this study demonstrates that community-based ADHD care is not consistent with evidence-based practice. Furthermore, variability in much of community-based ADHD care is unrelated to the provider, suggesting that innovative, system-wide interventions are needed to improve ADHD care.

abstract

NIH

BACKGROUND: Although many efforts have been made to improve the quality of care delivered to children with attention-deficit/hyperactivity disorder (ADHD) in community-based pediatric settings, little is known about typical ADHD care in these settings other than rates garnered through pediatrician self-report.

METHODS: Rates of evidence-based ADHD care and sources of variability (practice-level, pediatrician-level, patient-level) were determined by chart reviews of a random sample of 1594 patient charts across 188 pediatricians at 50 different practices. In addition, the associations of Medicaid-status and practice setting (ie, urban, suburban, and rural) with the quality of ADHD care were examined.

Epstein et al. *Pediatrics*. 2014;134:1-8.

MEDICATION ADHERENCE AND CONTINUITY

- ½ of the children experienced their first 30-day gap in medication supply within the first 3 months of treatment
- Fewer than ½ of the parents had contact with their physicians within the first month of medication initiation with the average time being greater than 2 months
- The average time to the first medication change was over 3 months.
- Results indicated that early physician contact and titration were related to greater continuity and medication supply over a period of 1 year

Brinkman WB, Baum R, Kelleher KJ, Peugh J, Gardner W, Lichtenstein P, Langberg J, Epstein JN. Relationship Between Attention-Deficit/Hyperactivity Disorder Care and Medication Continuity. *J Am Acad Child Adolesc Psychiatry*. 2016 Apr;55(4):289-94.

SUMMARY OF KEY POINTS

- ADHD is:
 - Highly prevalent (8%-10% of children and adolescents; 4% - 5% of adults)
 - Familial
 - Neurobiologically-based but environmentally influenced
 - Range of severity, mild to chronic and debilitating (substantial comorbidity; severe academic, occupational, personal consequences)
 - Often chronic but symptoms may decline but impairments remain or even increase over time due to cumulative effect of illness

DIAGNOSIS

- Complicated by heterogeneity, age, method, and practice issues
- Absence of biomarker does not equate with subjectivity
- Rating scales are diagnostic tools but do not meet the standard of a laboratory test, especially in terms of specificity
- Further workup (eg, neuropsych testing, specialty referrals) may can be helpful for mimics and comorbidity
- Impairment is central and guides treatment