

New Perspectives on Research and Clinical Care for Attention Deficit Hyperactivity Disorder

Stephen V. Faraone, Ph.D.

Distinguished Professor

*Departments of Psychiatry & of Neuroscience
and Physiology*

SUNY Upstate Medical University

@StephenFaraone



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|----------------------|------------------------|--------------|-------------|--------------|------------------|----------------|-----------------------------|
| NHE Inhibitor Patent | | | | X | | | |
| Shire/Takeda | X | | | | | | |
| Rhodes | | X | | | X | | |
| Akili | | | | | | X | |
| Vallon | | X | | | | | |
| Tris | | X | | | | | |
| Otsuka | X | | | | | | |
| IronShore | | X | X | | X | X | |
| Supernus | X | | | | | | |
| Genomind | | X | | | | X | |
| Arbor | X | | X | | X | | |
| Medice | | X | X | | | | X |
| OnDosis | | X | | | | | |
| Guilford Press | | | | X | | | |
| Oxford U. Press | | | | X | | | |



par·a·dox

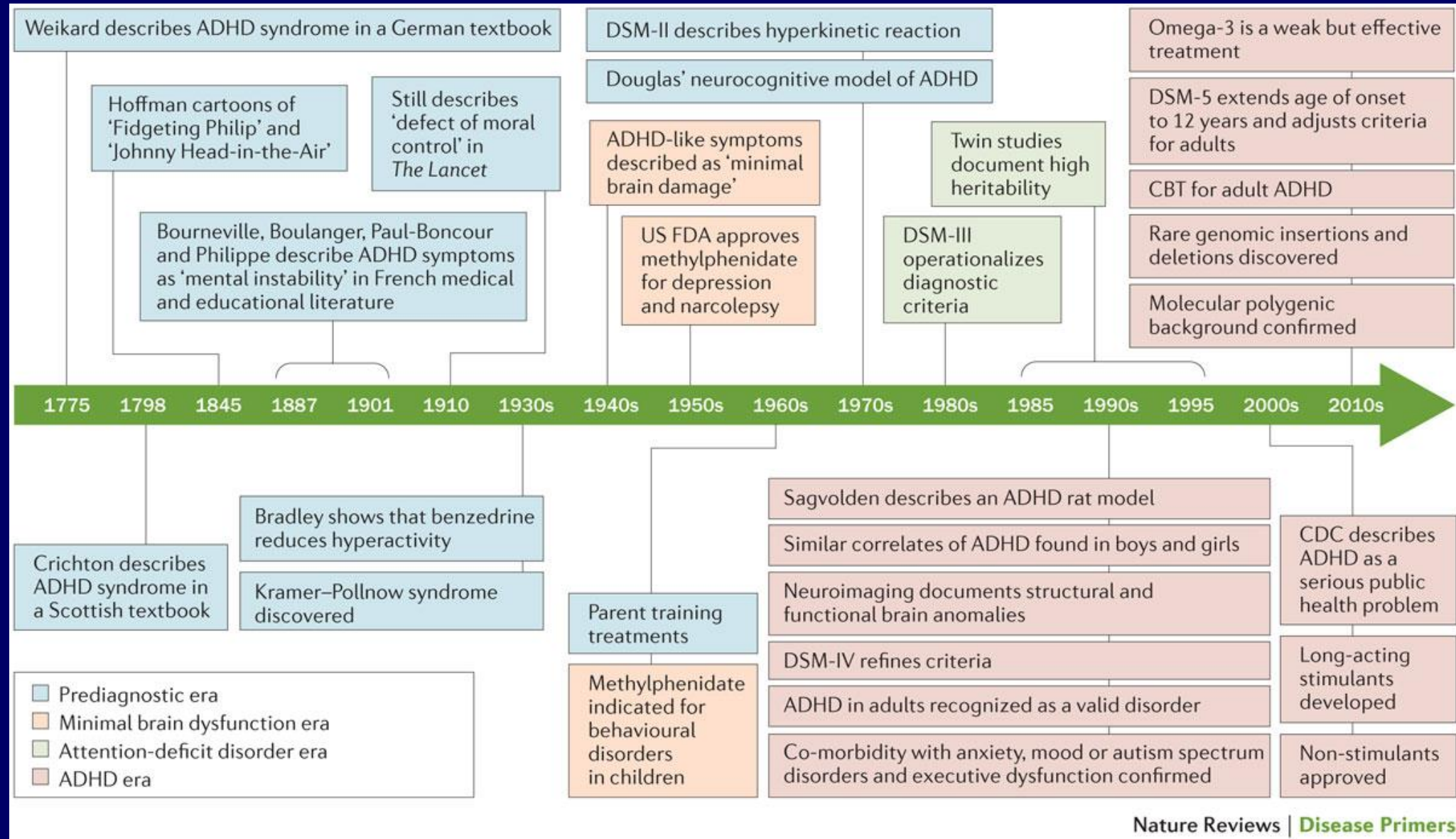
/ˈperəˌdäks/

noun

a seemingly absurd or self-contradictory statement or proposition that when investigated or explained may prove to be well founded or true.

Paradox: Despite its Long and
Distinguished History, the Media has
Waged a War on ADHD for Many
Decades

The History of ADHD



Nature Reviews | Disease Primers

No, There Is no Such Thing as ADHD

Different temperaments make some kids more active.

Post published by Robert Berezin M.D. on Mar 17, 2015 in The Theater of the Brain



Source: copyright by www.ochrint.org

No, there is no such thing as ADHD. Somewhere along the line we have lost the understanding that kids come in all shapes and sizes. Some kids are active, some are quiet; some kids are dreamers, others are daring; some kids are dramatic, others are observers; some impulsive, others reserved; some leaders, others followers; some athletic, others thinkers. Where did we ever get the notion that kids should all be one way?

ADHD

The Truth About

DOES

Attention Deficit and Hyperactivity Disorder

NOT

RICHARD SAUL, M.D.

EXIST.

The ADHD FRAUD

How Psychiatry Makes "Patients" of Normal Children

FRED A. BAUGHMAN JR., MD

WITH CRAIG HOVEY

TIME OPINION • ADHD

Doctor: ADHD Does Not Exist

Big Pharma's Manufactured Epidemic: The Misdiagnosis of ADHD

Investigative journalist Alan Schwarz sounds the alarm

By Gareth Cook on October 11, 2016

SCIENTIFIC
AMERICAN®

The War on ADHD Impacts Researchers

Public response to a paper from the Cardiff group showing an increased burden of rare chromosomal deletions or duplications in people ADHD (N. M. Williams et al. Lancet 376, 1401–1408; 2010)

“Most of the people who contacted us, and whom I met in the clinic, were thanking us for publishing the paper, but a few of the calls and e-mails were less kind. One, from a retired head teacher, said children with ADHD should be given the slipper. Some people accused us of being in cahoots with drug companies, and of being doctors who ‘just want to drug people’.”

Academia Joins the War on ADHD

(Smith, Social History of Medicine, 2017)

- “...the concept of ADHD has spread from the USA, where it emerged during the late 1950s, to most corners of the globe...”
- “Certainly, there is something rather insidious about the relentless global propagation of ADHD, which emerged in the USA not because psychiatrists suddenly realised that a certain percentage of American children were suffering from a mental disorder, but rather because of a host of political, ideological, demographic, technological, educational and environmental changes.”
- “Great efforts have been made by proponents of ADHD to downplay the possibility that cultural, social and environmental factors play any role in the prevalence or diagnosis of the disorder.”
- “Perhaps, instead of expecting all children, the world over, to conform to specific, DSM-

New Perspective: We need to be proactive in fighting the war on ADHD

Public Views of ADHD in Germany: A Survey of 1,008 Adults

(Speerforck et al., JAD, 2019)

- Only half view the symptoms of ADHD as mental illness
- One in five do not believe ADHD is a real disease
- Most believe that ADHD in youth is caused by the family-social context.
- “A large gap exists between evidence-based guidelines and public opinion.”

Casualties in the War on ADHD: Healthcare Disparities

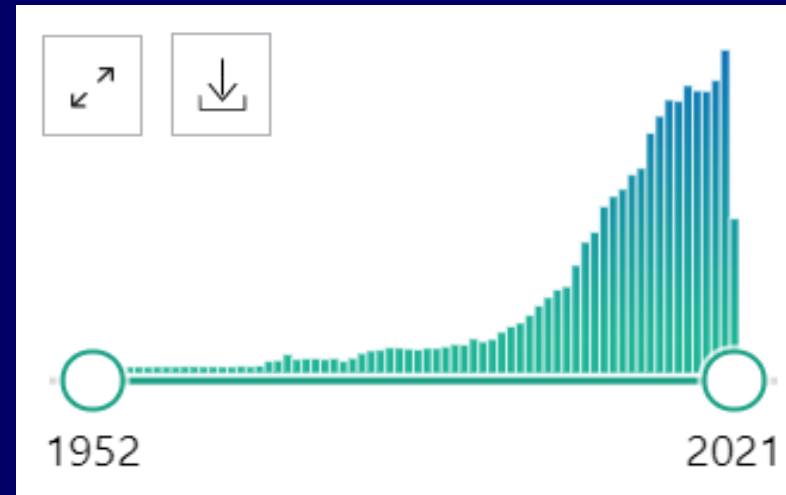
Sociodemographic predictors of respondents' belief that ADHD is real, from the 2002 US National Stigma Study (McLeod et al. Psych Services, 2007)

| Characteristic | OR | 95% CI |
|-------------------------------|-------|-----------|
| Female ^b | 1.94* | 1.49–2.51 |
| African American ^b | .50* | .35–.72 |
| Other race ^b | .38* | .24–.62 |
| Education | 1.20* | 1.14–1.26 |
| Income | 1.00 | 1.00–1.00 |
| Age | .99* | .98–.99 |

The War on ADHD Cause Stigma



Articles in the Scientific Literature



- 42194 about ADHD
- Only 10 address ADHD and stigma.

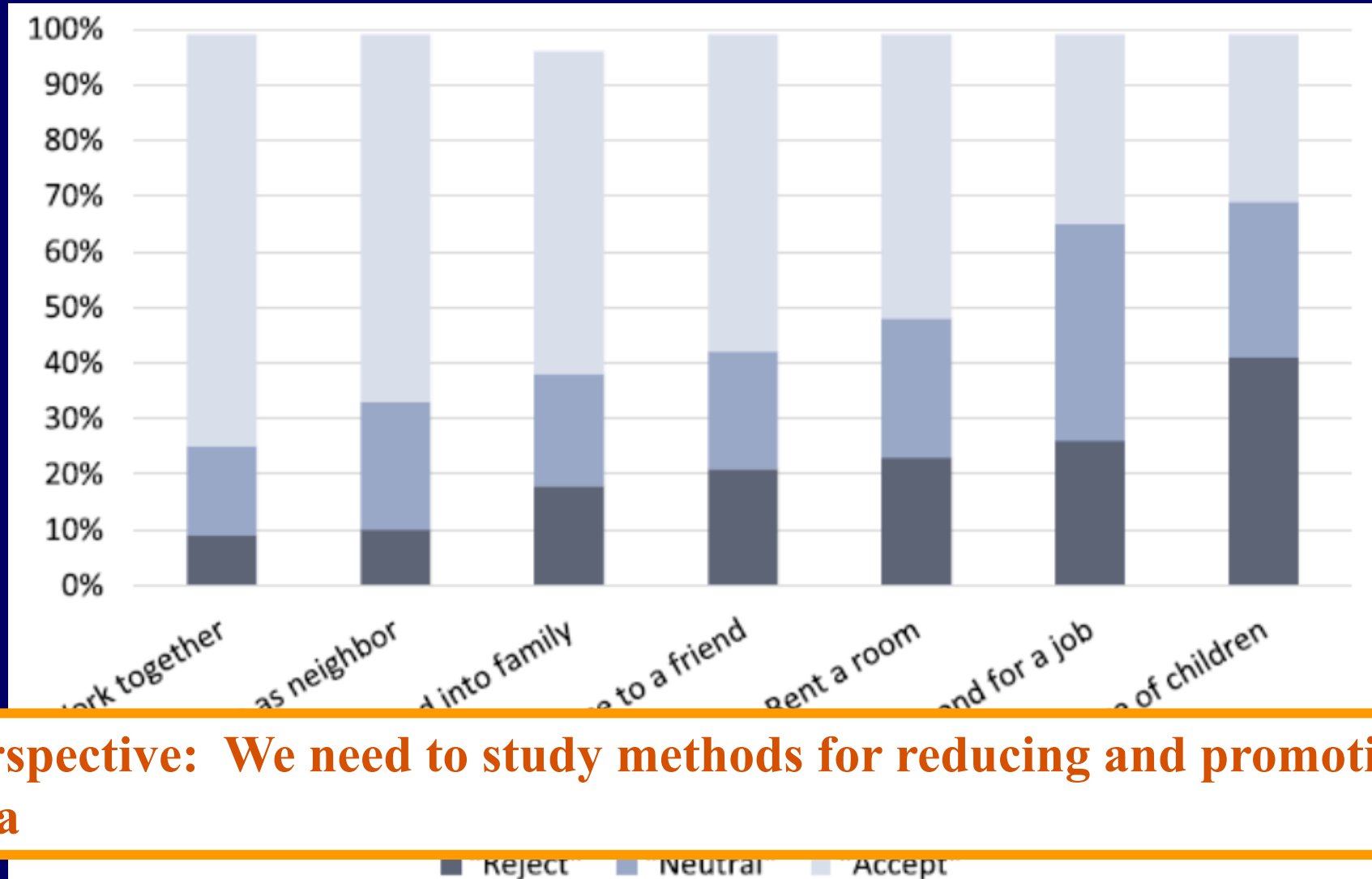
Effects of Stigma on Patients with ADHD and their Families

(Moldavsky & Sayal, Curr Psych Rep, 2013)

- Decreased self-esteem
- Less acceptance by peers
- Social isolation
- Lower self-perceptions of competence

Acceptance of Adults with ADHD into Hypothetical Social Situations

(Speerforck et al., Psychiat. Res., 2019)



New Perspective: We need to study methods for reducing and promoting resistance to stigma

Paradox: Medications for ADHD are
Highly Effective but are Demonized in
the Media

Search ▾

US edition ▾

The Guardian

“By all means, let adults buy speed if they want it for working, for partying or for losing weight. But let’s be honest with ourselves. The US is on track to becoming a nation of speed freaks, no matter how we choose to spell it.”

ADHD drugs are as dangerous as street meth - and Americans are getting hooked

Alexander Zaitchik

Sales for drugs like Vyvanse and Adderall are growing rapidly. To those who have experienced the dark-side of regular amphetamine use, that’s concerning



Where's the Moral Outrage for ADHD Mass Medication?

 SIGN UP FOR OUR NEWS ALERTS

SEARCH SIDE EFFECTS OF PSYCHIATRIC DRUGS

[SEARCH >](#)

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Become a member/donate

Major Study Reveals ADHD Drugs Have Never Been Proven Safe or Effective

 Email  Print  Save     

By Kelly Patricia O'Meara
November 13, 2014



For Aspiring Entrepreneurs

For Aspiring Entrepreneurs: Is ADHD Medication Killing Our Geniuses?

ADHD Medications are Safe and Effective

- Taking into account both efficacy and safety, evidence from this meta-analysis supports methylphenidate in children and adolescents, and amphetamines in adults, as preferred first-choice medications for the short-term treatment of ADHD (Cortese et al., Lancet Psychiatry, 2018).
- Very large population registry studies from Scandinavia show that treatment of ADHD with medication reduces accidents, criminality and substance use disorders (Chang et al., Biolog Psychiatry, 2019)



Stigma related to ADHD reduces treatment adherence and efficacy

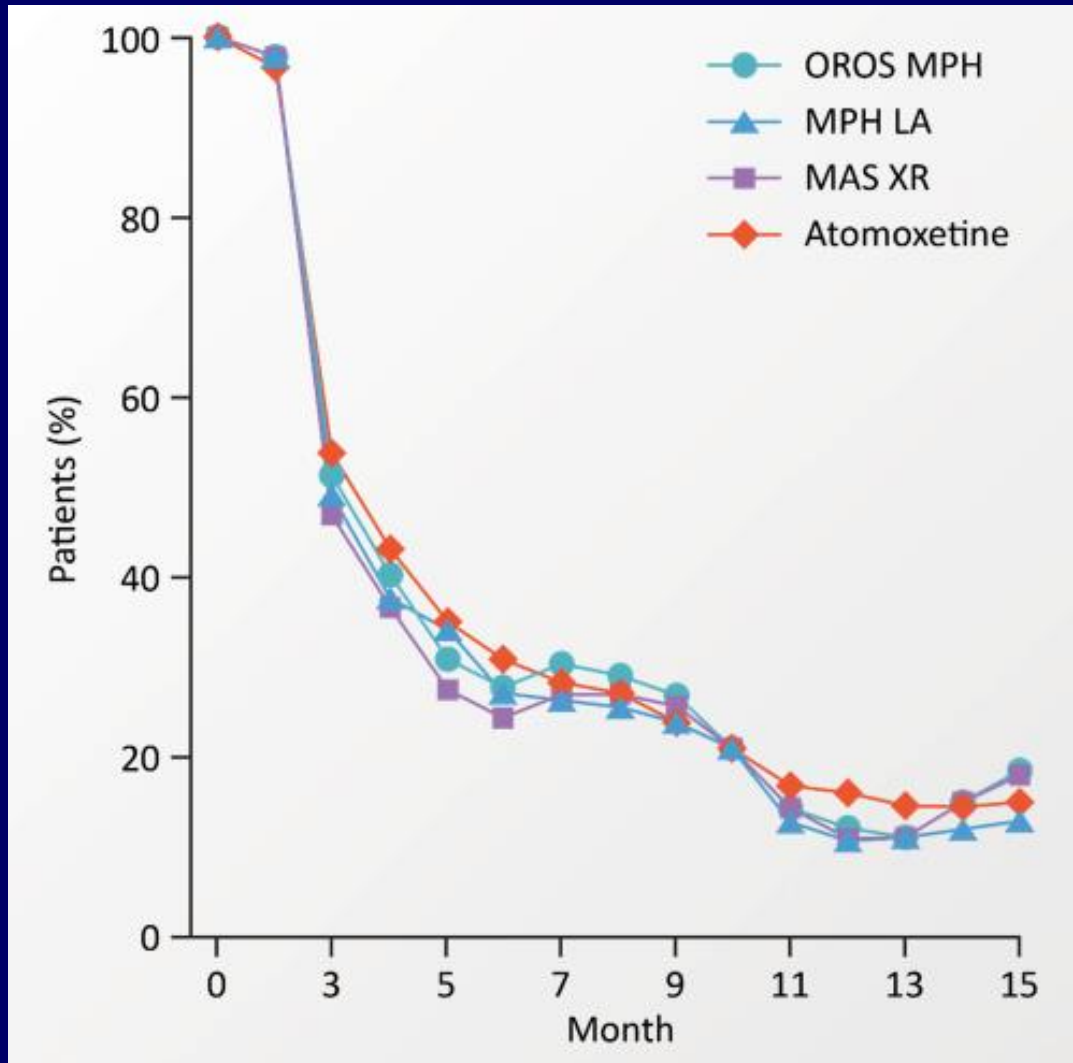
(Mueller et al., Atten Def Hyper Disord, 2012)

Casualties in the War on ADHD

- In 2019, the World Health Organization decided to exclude methylphenidate from the Essential Medicines List (EML) or the Essential Medicines List for Children (EMLc) for the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD).
- This decision was made by a small committee guided by a faulty meta-analysis.
- In collaboration with regional professional societies and advocacy groups for ADHD, the World Federation of ADHD is seeking to

New Perspective: We need international cooperation to disseminate evidenced-based information about ADHD to the public and policy makers.

Casualties in the War on ADHD: Despite High Efficacy, Adherence to Medication for ADHD is Low



- **Within 2–3 months, the majority of patients with ADHD have stopped taking medication consistently**
- **Adherence rates are better for long-acting medications**
- **Patients renewed their monthly prescriptions about 2 to 3 times per year**

J Manag Care Pharm 2004;10:122–9.; Sanchez R *et al. Pharmacotherapy* 2005;25:909–17

Reasons for Non-Adherence

Brinkman *et al. Academic Pediatrics* 2018;18:273–80

- **LACK OF EFFICACY**

- I felt I could manage without it
- I wanted to find out if I could manage without it
- I was doing so well I no longer

- **ADVERSE EFFECTS**

- Physical symptoms (nausea, no appetite, thirsty, insomnia, shaky, tired, and/or dry mouth)
- Felt ‘drugged’ (‘zoned out’, lifeless, like a zombie, no personality)

New Perspective: Does stigma create a nocebo effect and worsen adherence to medication?

- My parent(s) wanted to find out if I could manage without it
- My doctor wanted to find out if I could manage without it

- **OTHER**

- I kept forgetting to take it
- I was tired of taking it
- My parents decided to stop it
- I stopped for the summer

S,

Paradox: Despite Low Effect Sizes &
a Weak Evidence Base, Parents &
Patients Crave Non-Drug Treatments

Public Views of ADHD in Germany: A Survey of 1,008 Adults

(Speerforck et al., JAD, 2019)

Two-thirds were against the use of stimulants for ADHD. Homeopathic remedies are four times more likely to be recommended.

Treatment Preferences for ADHD: 2002 US National Stigma Study

(McLeod et al. Psych Services, 2007)

| Treatment preference | N | % |
|--------------------------------------|-----|----|
| Counseling and medication | 471 | 65 |
| Counseling only | 151 | 21 |
| Medication only | 39 | 5 |
| Neither counseling nor medication | 64 | 9 |

Systematic Review of Patients' and Parents' Preferences for ADHD Treatment Options and Processes of Care

(Schatz et al. 2015, Patient)

- A substantial fraction of parents want to avoid stimulant medication.
- Parents' treatment preferences influenced by
 - beliefs regarding the cause of ADHD
 - knowledge of a treatment
 - treatment goals
 - previous treatment experiences



Stigmatization of drug treatment in the war on ADHD has stimulated the search for non-drug treatments but could lead to greater use of less effective treatments.

New Perspective: Studies of treatment preference should address the effects of stigma.

**Paradox: The Diagnosis of ADHD
is Criticized as Subjective Yet
Evidence for Validity is High**

Is Attention-Deficit Hyperactivity Disorder in Adults a Valid Disorder?

Thomas Spencer, Joseph Biederman, Timothy Wilens & Stephen V. Faraone
(HARVARD REV PSYCHIATRY 1994;1:326–35.)

Eur Child Adolesc Psychiatry (2005)
14:1–10 DOI 10.1007/s00787-005-0429-z

REVIEW

Stephen V. Faraone

The scientific foundation for understanding attention-deficit/hyperactivity disorder as a valid psychiatric disorder

Attention deficit hyperactive disorder diagnosis continues to fail the reliability and validity tests

Martin Whitely

Australian & New Zealand Journal of Psychiatry
2015, Vol. 49(6) 497–498
DOI: 10.1177/0004867415579921

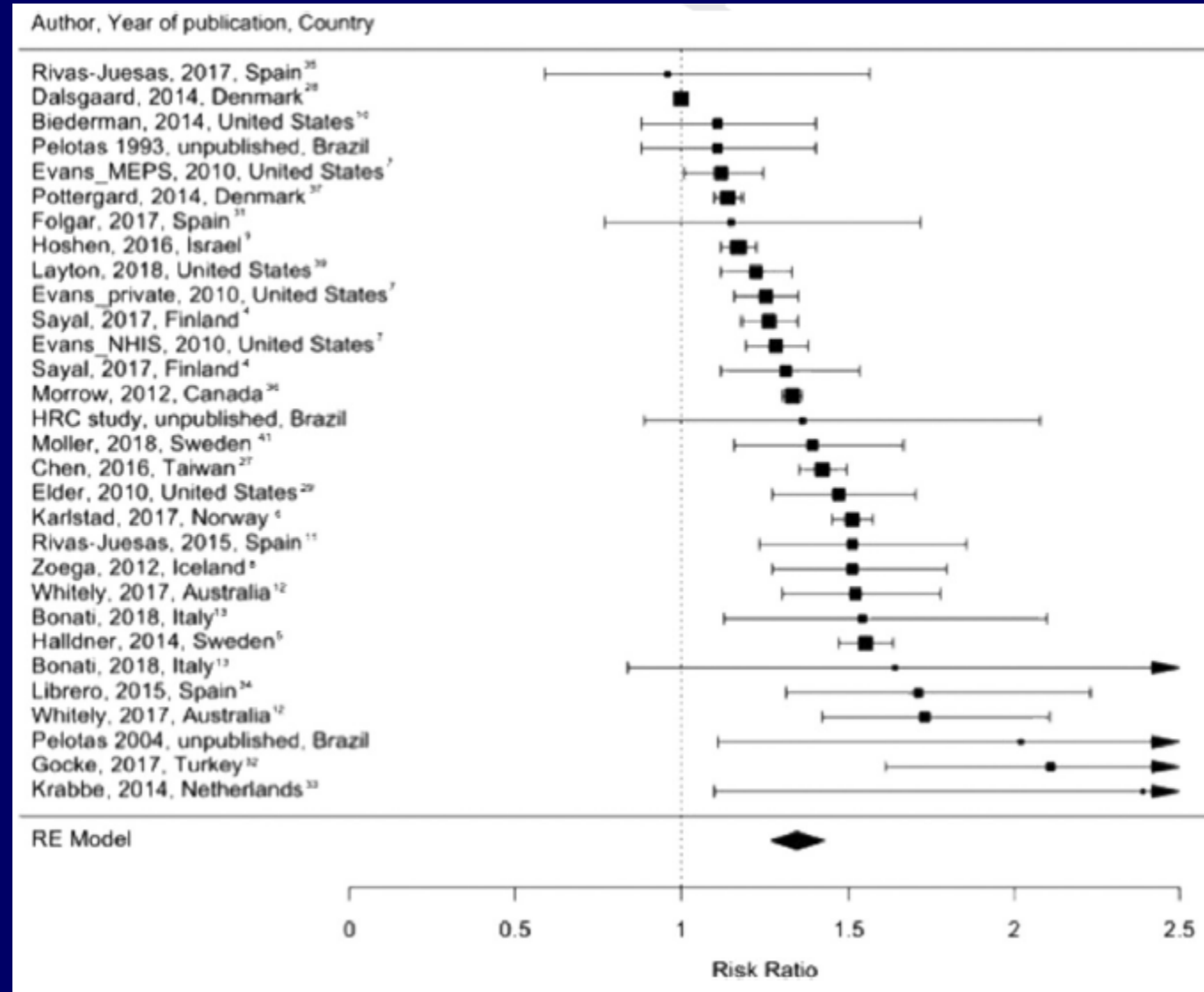
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New Zealand College of Psychiatrists 2015
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anp.sagepub.com



- “ADHD diagnoses are notoriously unreliable. As detailed below, a child’s chances of being prescribed ADHD drugs are significantly influenced by birth date relative to classroom peers”

Relative Age (Immaturity) & the Validity of ADHD Diagnoses

- The Finding Supported by two Meta-Analyses
 - Children and adolescents who are relatively younger compared to their classmates have a higher risk of receiving an ADHD diagnosis. (Holland & Sayal, ECAP, 2018; Caye et al., JAACAP, 2019)
- The fact has been discussed at length. The implications for stigma have not.



Does Immaturity Play a Role in ADHD?

Experts suggest behaviors can depend on the environment as well as the child's age.



Is It Really A.D.H.D. or Just Immaturity?

BY KJ DELL'ANTONIA

MARCH 11, 2016 1:22 PM

205

The New York Times

Immaturity Mistaken for ADHD?

Youngest Kids in Classroom More Likely to Be Diagnosed

By Salynn Boyles



ADHD: claims we're diagnosing immature behaviour make it worse for those affected

February 2, 2017 2.05pm EST

Arguments that immature children are incorrectly diagnosed with ADHD are simplistic. from www.shutters

THE CONVERSATION

STIGMA
THE MOST PAINFUL WORD
IN MENTAL ILLNESS

Relative Age (Immaturity) & ADHD: Negative Interpretations

“...it is possible that some relatively young children may be unnecessarily offered and exposed to medication, the long-term effects of which are still not fully understood” (Holland & Sayal, ECAP, 2018)

“In terms of overdiagnosis, there is concern of unnecessary medication of children whose behaviour may be managed through other means or may be reflective of their relative maturity.” (Ford-Jones, Paediatr Child Health, 2015)

“Further implications of misdiagnosis involve the cost for families that have a child assessed and treated for ADHD as well as costs within the health care system” (Ford-Jones, Paediatr Child Health, 2015)

A Well-Balanced View

(Sonuga-Barke & Fearson, JCPP, 2019)

...“young-for-class/grade children are more likely than older children to struggle with the academic and social demands imposed by the classroom, an effect that is exacerbated for children who meet diagnostic thresholds for ADHD symptoms. According to this view, ADHD symptoms are not elevated in young-for-class/grade children, but given the same level of symptoms, younger children will find it more difficult than older children to function effectively in the classroom”

Another Well-Balanced View

(Halldner et al., JCPP, 2014)

“Children that are more immature than the class average face too high demands during the early school years. This could, in turn, contribute to ADHD-related functional impairment. The inverse interpretation is also possible; that children born earlier during the calendar year and, hence, on average more mature, may conceal or make up for clinically relevant ADHD-related symptoms.”

What's Missing from the Relative Age (Immaturity) Conversation

- No one studies if diagnostic errors have been made.
 - Perhaps the young for age children with ADHD actually have the disorder.
 - Perhaps many old for age kids have undiagnosed ADHD.
 - Perhaps there is a mix of the two effects.
- No one has documented harm.
 - If children had been incorrectly diagnosed was the error eventually discovered?
 - What is the risk/benefit. The relative risk is only 1.3.
- Failure to document diagnostic error & harm is true of many overdiagnosis claims, e.g., from the US Center for Disease Control and others



Researchers stigmatize the disorder when making claims about the subjectivity of diagnosis, overdiagnosis or inappropriate diagnosis based on weak epidemiologic associations that do not address harm

New Perspective: Authors, reviewers and journal editors should discourage language in papers that use weak data to support stigmatizing interpretations *when equally reasonable non-stigmatizing interpretations exists.*

**Paradox: Concerns About the
Subjective Diagnosis of ADHD have
Driven the Development of Less
Valid Objective Diagnostic Tools.**

Objective Tests Cleared by the US FDA for ADHD

The Test of Variables of Attention (T.O.V.A.®)

An FDA-cleared, computerized, and objective measure of attention and inhibitory control normed by gender for ages 4 to 80+.

NEBA – FDA CLEARED BRAINWAVE ADHD ASSESSMENT AID

NEBA is the first of a new kind of medical device cleared by FDA that uses brainwaves (EEG) to help clinicians more accurately diagnosis ADHD in children and adolescents (ages 6 – 17.99 years).

ADHD NEWS & RESEARCH

FDA-Cleared Diagnostic Tool May Improve Speed, Accuracy of ADHD Diagnoses, Study Finds

A randomized, controlled study found that a computerized tool called QbTest may make it easier for clinicians to accurately diagnose or rule out ADHD in fewer office visits.

Neuropsychological Testing in ADHD: A Special Issue

Neuropsychological Testing is Not Useful in the Diagnosis of ADHD: Stop It (or Prove It)!

Russell A. Barkley, Ph.D.

The ADHD Report, 2019

“Every week in the United States, thousands of people are evaluated for ADHD. In many instances, though not always, neuropsychological testing is being employed as part of a larger psychological evaluation. **Such testing is often required by referring agencies to establish the diagnosis of ADHD.**”

“we as professionals need to resist demands for neuropsychological testing to confirm or rule out a diagnosis of ADHD. We need to stop making high stakes decisions about the diagnosis of ADHD, and hence related entitlements, protections, and accommodations for people with ADHD on the basis of such testing.”



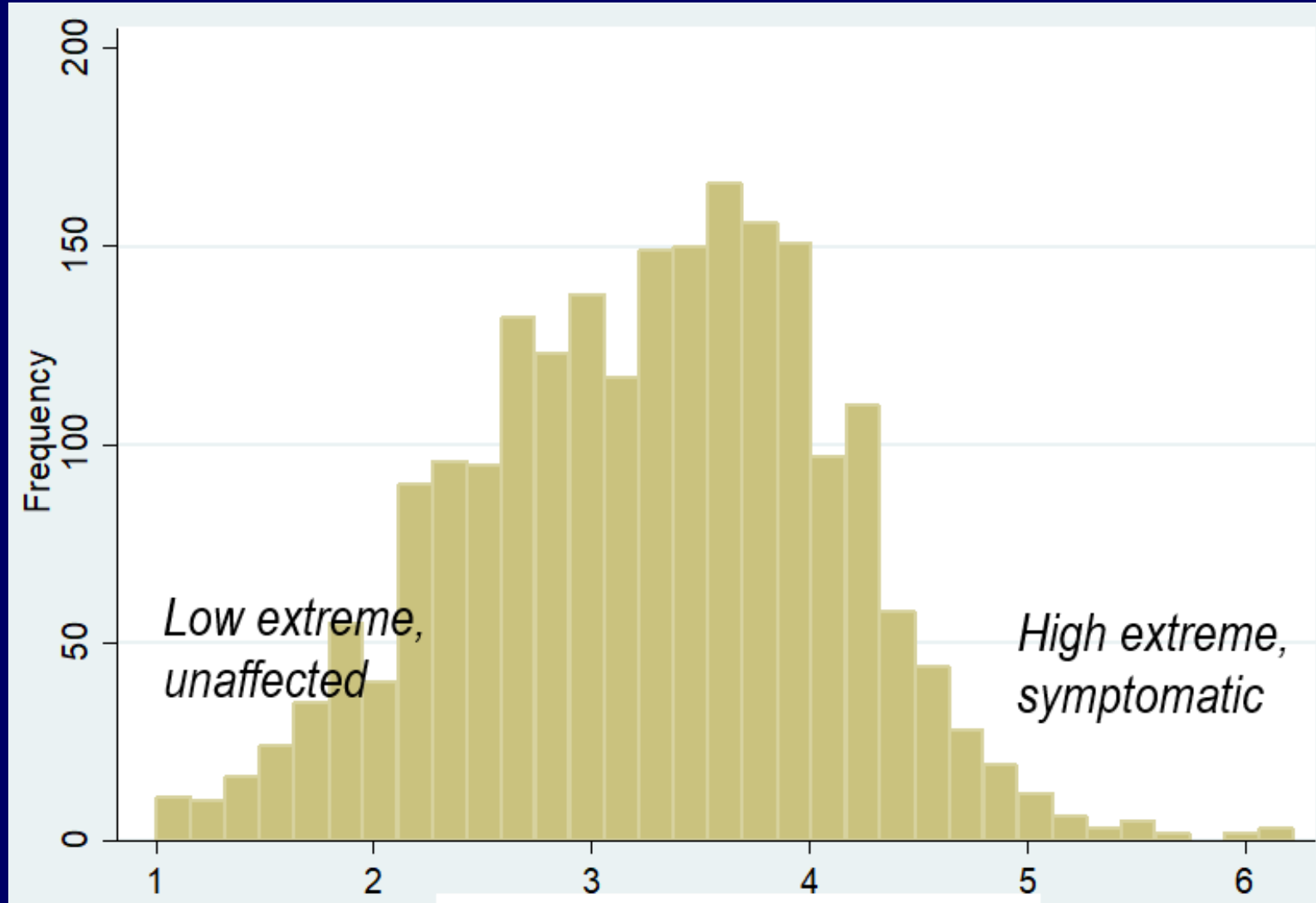
Researchers stigmatize the disorder when inaccurately questioning the validity of the diagnosis of ADHD as a means of justifying their search for an objective diagnosis. A good diagnosis is reproducible and gives meaningful predictions, regardless of whether it is objective.

New Perspective: Let's stop apologizing for the 'subjectivity' of the diagnosis of ADHD

**Paradox: ADHD is a both a
Disorder and a Continuous Trait in
the Population**

SWAN Scores in 2,143 Youth

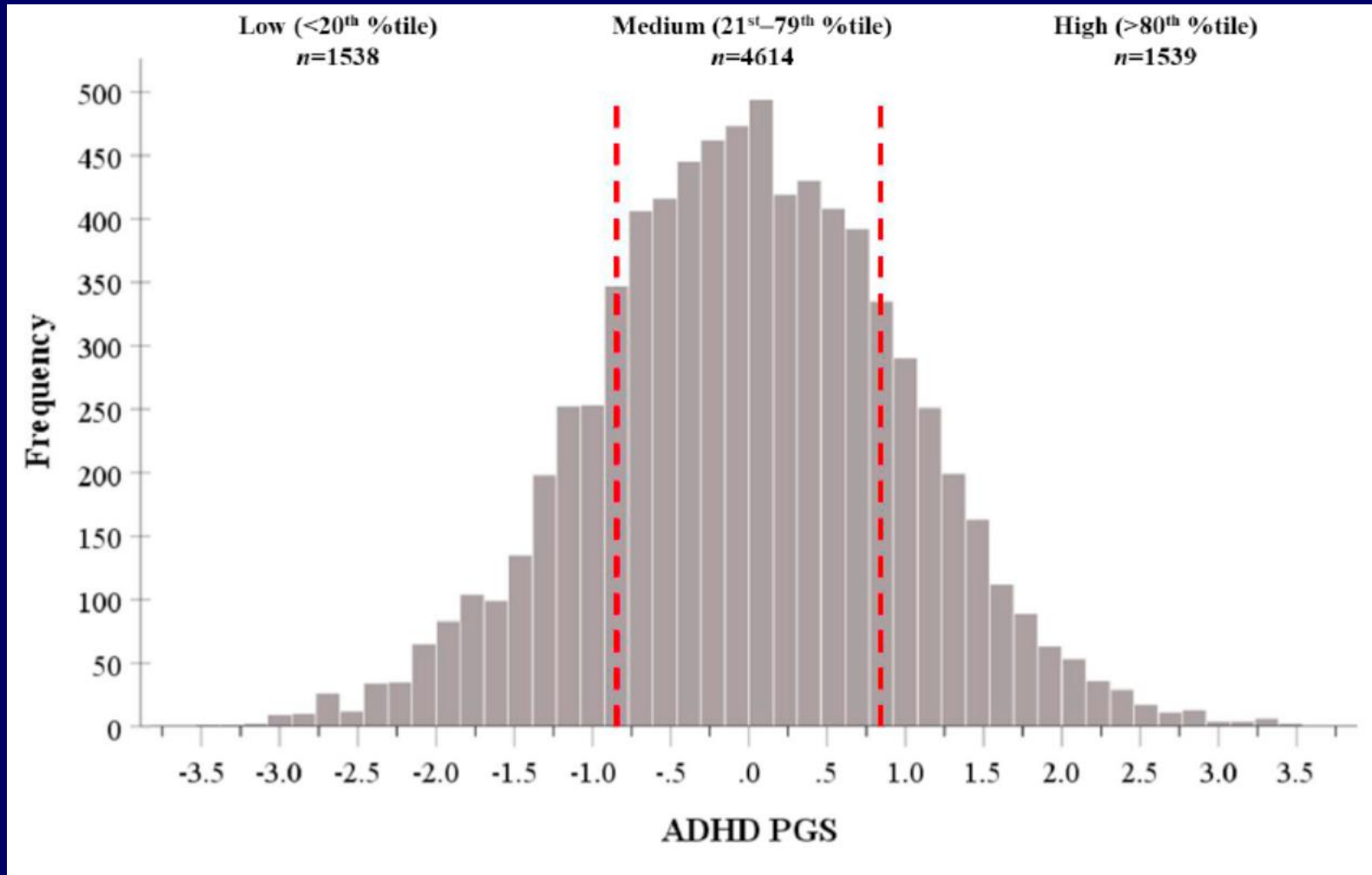
(Greven et al., JCPP, 2016)



ADHD Polygenic Risk in 7,000 Adolescents

(Li, BioRxiv; <http://dx.doi.org/10.1101/611897>)

A polygenic risk score indexes one's risk for ADHD based on DNA assays.



ADHD is the Extreme and Impairing Tail of a Continuum

(Asherson & Trzaskowski, JCPP, 2015)

- Heterogeneity can be seen as variation along one or more continua, eliminating a proliferation of subtypes
- We should define thresholds as we do for other medical traits such as blood pressure (hypertension) and weight (obesity)
- Re-conceptualize diagnostic error.
 - Categorical model implies that overdiagnosis is a huge error : Person has ADHD vs. Not
 - Dimensional model shifts focus from “is ADHD over-diagnosed?” to “what threshold should be used to diagnose ADHD?”
- Awareness of subthreshold symptoms and impairments is clinically important.

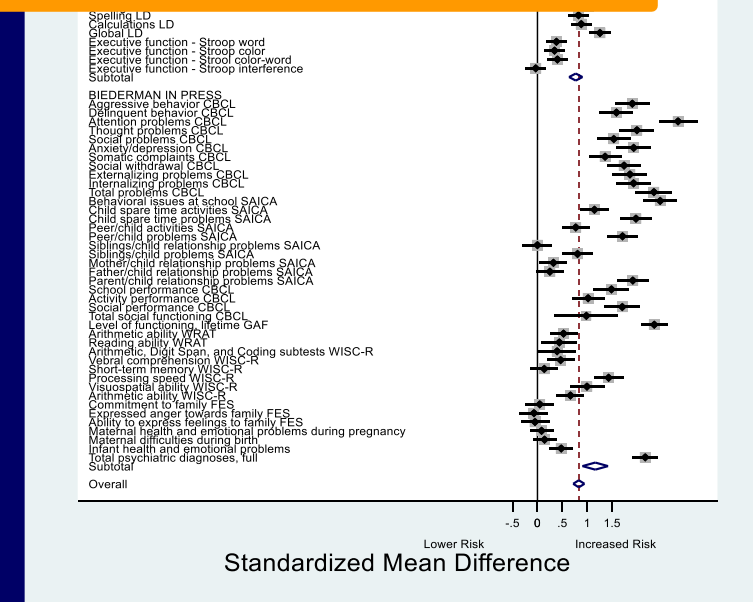
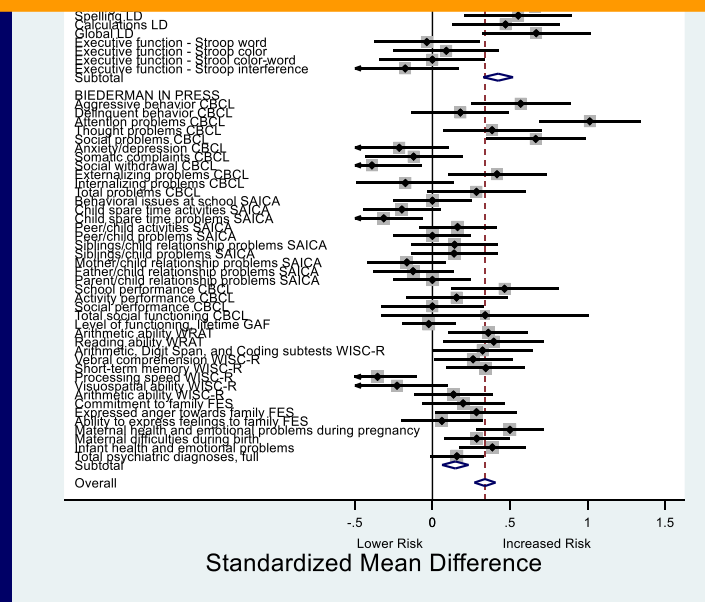
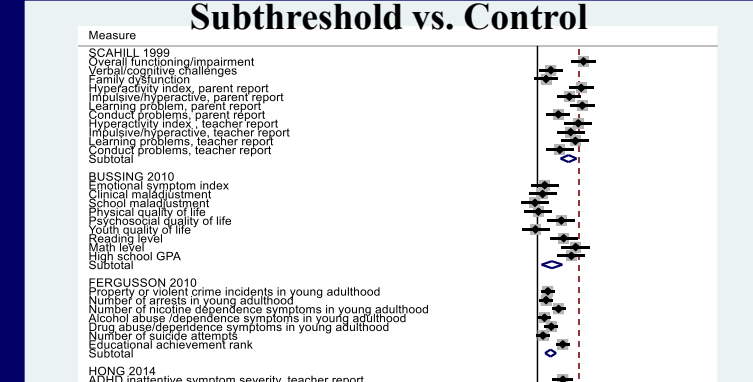
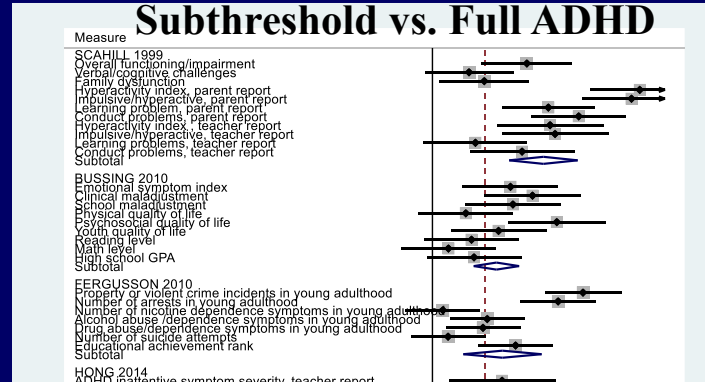
Meta-Analysis of Subthreshold ADHD: Continuous Outcomes

(Kirova et al., Psychiatry Res., 2019)

- Subthreshold cases milder than Full ADHD Cases but, compared with

New Perspective: Viewing ADHD as a continuous trait should allow for clinical discretion when diagnosing patients with subthreshold symptoms

- Psychopathology
- School Failure
- Neuropsychological Impairment
- Substance Use
- Psychosocial Impairment



Neurodiversity - a Revolutionary Concept for Autism and Psychiatry

(Baron-Cohen, JCPP, 2017)

- Disease/disorder vs Neurodiversity framework.
 - Those with disorders cannot function in any environment without treatment (e.g schizophrenia).
 - Those with disabilities can function in some environments or with accommodations. They require societal support, acceptance of difference and diversity, and “reasonable adjustments” of society (e.g., autism spectrum disorders, ADHD).
- “We need non-stigmatising language and concepts for thinking about people who are different and/or who have disabilities.”

Neurodiversity: Popular Culture Leads Academia

- PubMed: 36 papers with “Neurodiversity” in title
- Amazon: Over 1,000 results for "neurodiversity“
- Google: About 2,350,000 results



New Perspective: We should study and better define neurodiversity before it is completely hijacked by the media war on ADHD.



Science, Consensus and
Dissemination Can Reduce Stigma
and Win the War on ADHD

Home Countries of Steering Committee and Authors Suggested by Steering Committee (Total = 77)



Fighting Stigma and Misinformation with Consensus



Neuroscience & Biobehavioral Reviews

Available online 4 February 2021

In Press, Journal Pre-proof



The World Federation of ADHD International Consensus Statement: 208 Evidence-based Conclusions about the Disorder

Stephen V. Faraone^{a, b, c, *}, Tobias Banaschewski^{d, e, f}, David Coghill^g, Yi Zheng^{h, i, j, k, l, m}, Joseph Biederman^{n, o}, Mark A. Bellgrove^{p, q}, Jeffrey H. Newcorn^{r, s}, Martin Gignac^{t, u}, Nouf M. Al Saud^v, Iris Manor^{w, x}, Luis Augusto Rohde^y, Li Yang^{z, A, l}, Samuele Cortese^{B, C, D, E, F}, Doron Almagor^{G, H}, Mark A. Stein^{I, J}, Turki H. Albatti^K, Haya F. Aljoudi^{L, M}, Mohammed M.J. Alqahtani^{N, O}, Philip Asherson^P, Lukoye Atwoli^{Q, R, S, T}, Sven Bölte^{U, V, W}, Jan K. Buitelaar^X, Cleo L. Crunelle^{Y, Z}, David Daley^{aa, ab}, Søren Dalsgaard^{ac, ad}, Manfred Döpfner^{ae, af}, Stacey Espinet^{ag}, Michael Fitzgerald^{ah}, Barbara Franke^{ai, aj}, Jan Haavik^{ak, al}, Catharina A. Hartman^{am, an, ao, ap}, Cynthia M. Hartung^{aq}, Stephen P. Hinshaw^{ar, as, at, au, av}, Pieter J. Hoekstra^{aw}, Chris Hollis^{E, ax, ay, az}, Scott H. Kollins^{ba, bb}, J.J. Sandra Kooij^{bc, bd, be, bf}, Jonna Kuntsi^{bg}, Henrik Larsson^{bh, bi}, Tingyu Li^{bj, bk, bl}, Jing Liu^{l, z, A, bm, bn}, Eugene Merzon^{bo, bp, bq, br}, Gregory Mattingly^{bs, eh}, Paulo Mattos^{bt, bu, bv}, Suzanne McCarthy^{bw}, Amori Yee Mikami^{bx}, Brooke S.G. Molina^{by}, Joel T. Nigg^{bz}, Diane Purper-Ouakil^{ca, cb}, Olayinka O. Omigbodun^{cc, cd}, Guilherme V. Polanczyk^{ce}, Yehuda Pollak^{cf, cg}, Alison S. Poulton^{ch, ci}, Ravi Philip Rajkumar^{cj}, Andrew Reding^{ck}, Andreas Reif^{cl, cm}, Katya Rubia^{b, cn, co}, Julia Rucklidge^{cp}, Marcel Romanos^{cq, cr, cs}, J. Antoni Ramos-Quiroga^{ct, cu, cv, cw, cx, cy, cz}, Arnt Schellekens^{da, db}, Anouk Scheres^{dc}, Renata Schoeman^{dd, de, df, dg, dh, di}, Julie B. Schweitzer^{dj}, Henal Shah^{dk}, Mary V. Solanto^{dl, dm, dn, do}, Edmund Sonuga-Barke^{dp, dq}, César Soutullo^{c, co, dr}, Hans-Christoph Steinhausen^{ds, dt, du, dv}, James M. Swanson^{dw}, Anita Thapar^{dx}, Gail Tripp^{dy}, Geurt van de Glind^{dz}, Wim van den Brink^{ea}, Saskia Van der Oord^{eb, ec}, Andre Venter^{ed}, Benedetto Vitiello^{ee, ef}, Susanne Walitza^{eg}, Yufeng Wang^{l, z, A}

- The statement has been endorsed by 77 authors and an additional 337 people who have read this document and agree with its contents.

Plans for Disseminating the ICS ADHD

- Translations at WF ADHD Website
 - Completed: Mandarin, Spanish, French, German, Welsh (abstract only)
 - In progress: Arabic, Hindi, Turkish, Portuguese, Dutch, Japanese and Italian
- ICS Slide set
 - I am preparing a set of powerpoint slides that will also be widely distributed
- You can help
 - Translate the ICS ADHD into another language
 - Promote the ICS ADHD on your social media accounts
 - Register your support at:
<https://www.surveymonkey.com/r/6HSYHZD>



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Learn how to diagnose and treat ADHD in adults: www.ADHDinAdults.com