THDA et trouble de l'usage. Importance, efficacité et sécurité du traitement pharmacologique.

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Review

Jose Martinez-Raga*, Nestor Szerman, Carlos Knecht and Raquel de Alvaro

Attention deficit hyperactivity disorder and dual disorders. Educational needs for an underdiagnosed condition

Abstract: A wide range of comorbid psychiatric disorders overlap with attention-deficit hyperactivity disorder (ADHD) across the life span. There is a robust and complex link between ADHD and substance use disorders (SUD). The aim of this report was to review the neurobiological and other vulnerability factors explaining the comorbidity of ADHD and an addictive disorder, as well as the key aspects of the assessment and diagnosis of dually diagnosed ADHD patients. A comprehensive and systematic search of relevant databases (PubMed, Embase, and PsychINFO) was conducted to identify studies published in peer-reviewed journals until July 31, 2012, with the aim of exploring the association of ADHD and SUD with postgraduate training and residency education. Across the life span, ADHD is associated with significant impairment and comorbidity. Data from epidemiological, clinical and epidemiological studies show a very solid link between ADHD and SUD. Therefore, it is very important to carefully and systematically assess for any substance use in patients with suspected ADHD coming to initial assessment, and vice versa. While there are various valid and reliable rating and screening scales, diagnosis cannot solely rely on any of the instruments available for both SUD and ADHD in adult patients with dual pathology. The most important and effective tool in the assessment of dually diagnosed patients with ADHD and SUD is a full and comprehensive clinical and psychosocial assessment. Hence, it is essential to actively incorporate training opportunities on the assessment, diagnosis, and management of adult ADHD and dually diagnosed ADHD patients during postgraduate education residency or specialist training.

TRASTORNO
DÉFICIT
TENCIÓN

1

4 En el ORIGEN 76% de los casos de TDAH la causa

- El TDAH es un trastorno neurobiológico **complejo y multifactorial** que raramente se presenta sin otros trastornos comórbidos.
- El TDAH es un trastorno **heterogéneo** en gravedad y evolución.
- Clínicamente el TDAH puede ser **muy variable por la amplia combinación de síntomas** que pueden llevar al diagnóstico y por la elevada **comorbilidad** que complica su diagnóstico, su tratamiento y su evolución.
- Al menos un 60% de los niños afectados pueden presentar **síntomas y problemas conductuales y psiquiátricos significativos en la edad adulta**.

Tratamiento Farmacológico

Tratamiento Psicológico

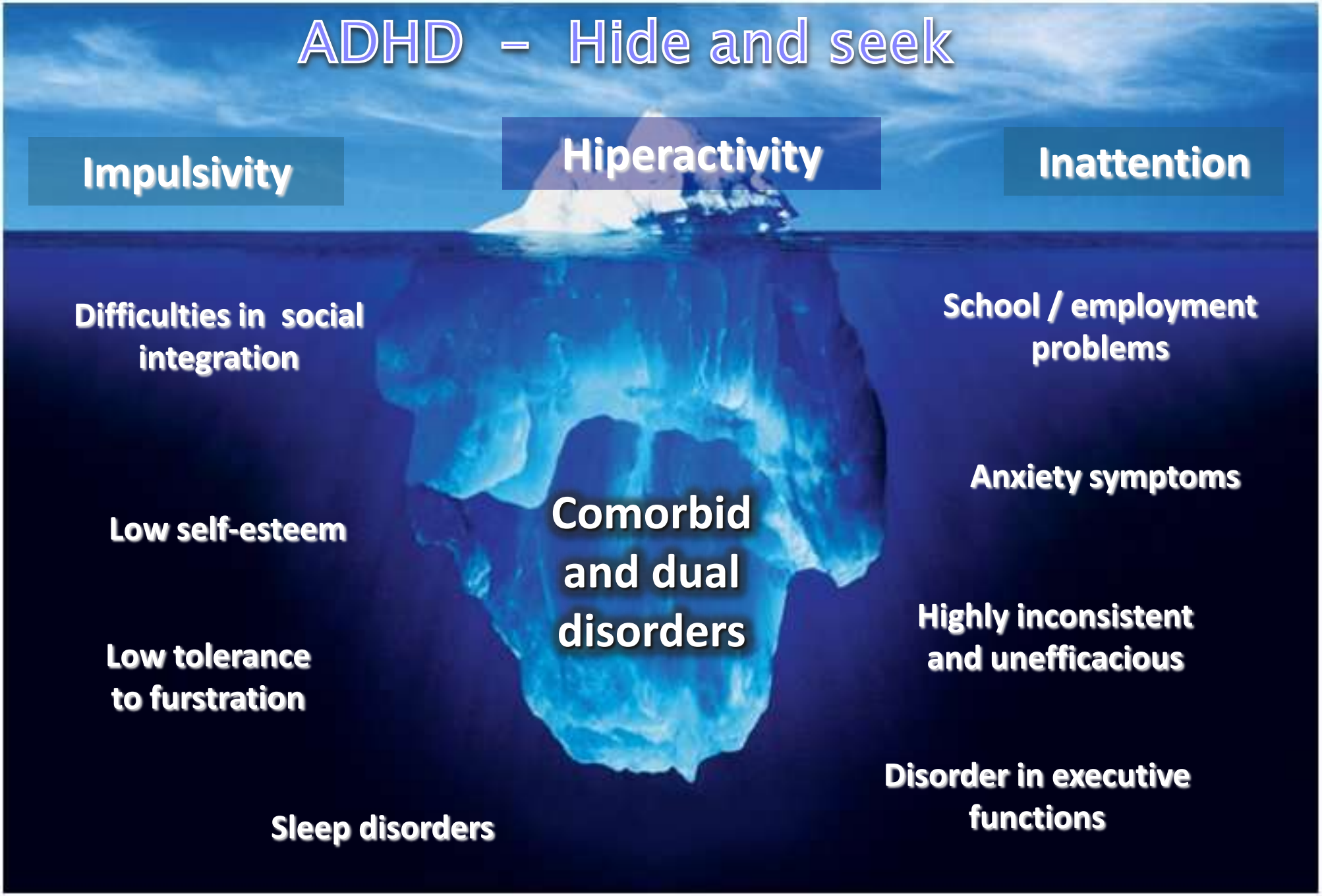
Tratamiento Psicopedagógico

Referencias:
1. Polanczyk G et al. The worlwide prevalence of ADHD: a systematic review and metaregression analysis. Am J Psychiatry. 2007;164:942-8.
2. Faraone SV. et al. Molecular genetics of attention-deficit/hiperactivity disorder. Biol Psychiatry. 2005 Jun ;57(11):1313-23. Epub 2005 Jan 21.

Prevalencia y persistencia del TDAH

- El TDAH tiene una tasa de prevalencia en la edad adulta del **2,5-5%**, que compite con la depresión.
- La **persistencia** del TDAH en la edad adulta es del **50-70%**.
- En la edad adulta existe una **relación de 1,6:1 entre hombres y mujeres** (en niños, 2:1) con TDAH; las mujeres tienden a ser más infradiagnosticadas.
- El TDAH en adultos no es más difícil de diagnosticar y tratar que otras enfermedades mentales frecuentes.
- El TDAH en adultos es tratable en la mayoría de los casos.

1. Kooij et al. *BMC Psychiatry* 2010;10:67.
2. Fayyad et al. *Br J Psychiatry* 2007;190:402–9.
3. APA. DSM-5 2013


ADHD – Hide and seek
Impulsivity
Hiperactivity
Inattention
Difficulties in social integration
School / employment problems
Anxiety symptoms
Low self-esteem
Comorbid and dual disorders
Highly inconsistent and unefficacious
Low tolerance to furstration
Disorder in executive functions
Sleep disorders

¿Cómo afecta el TDAH en la vida del sujeto?

El trastorno debe estar presente en al menos 2 ámbitos de la vida (p. ej., hogar, trabajo, colegio), con interferencia de los síntomas con la actividad social, laboral o académica.

Attention-deficit/hyperactivity disorder

Stephen V. Faraone[1,2], Philip Asherson[3], Tobias Banaschewski[4], Joseph Biederman[5], Jan K. Buitelaar[6], Josep Antoni Ramos-Quiroga[7–9], Luis Augusto Rohde[10,11], Edmund J. S. Sonuga-Barke[12,13], Rosemary Tannock[14,15] and Barbara Franke[16]

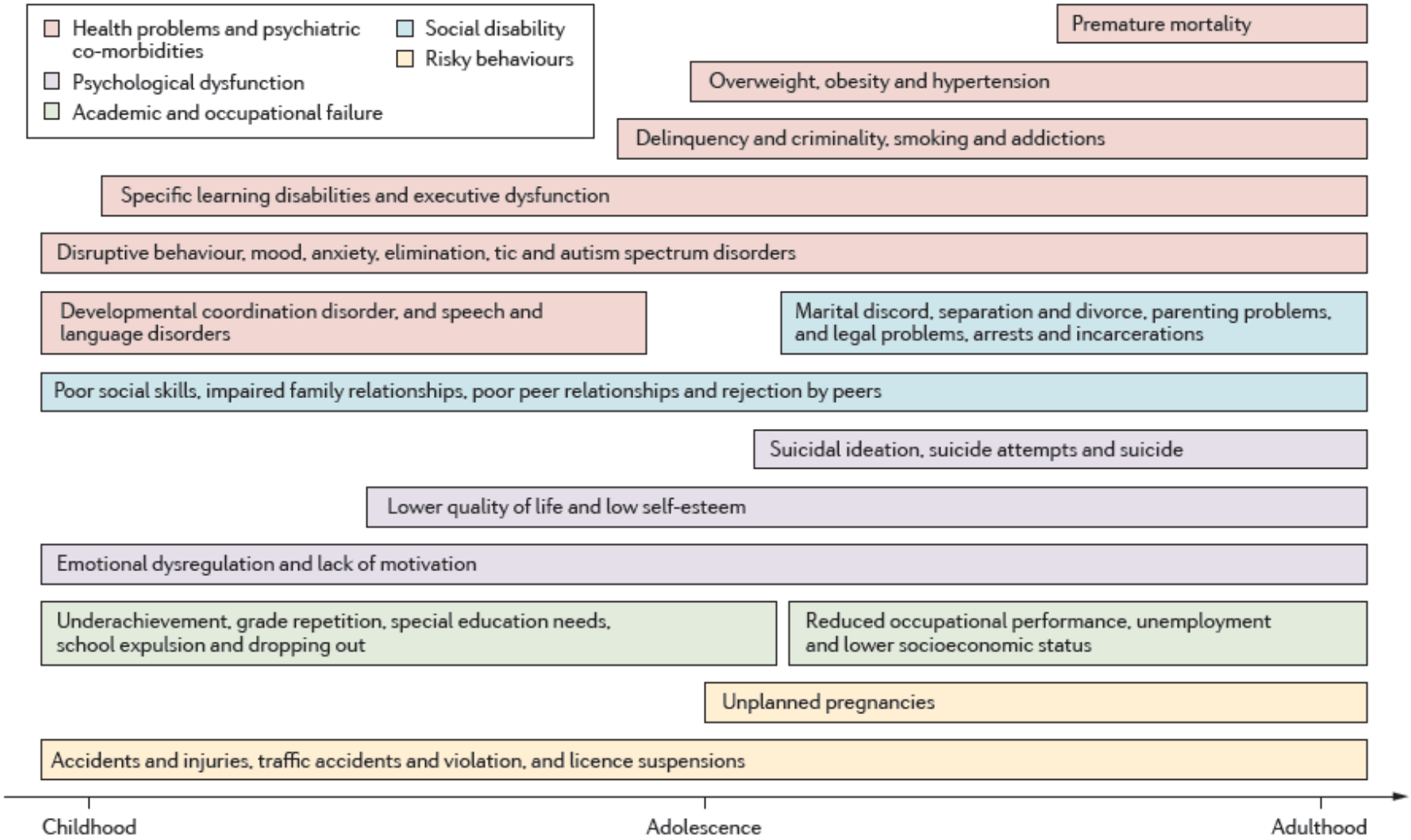
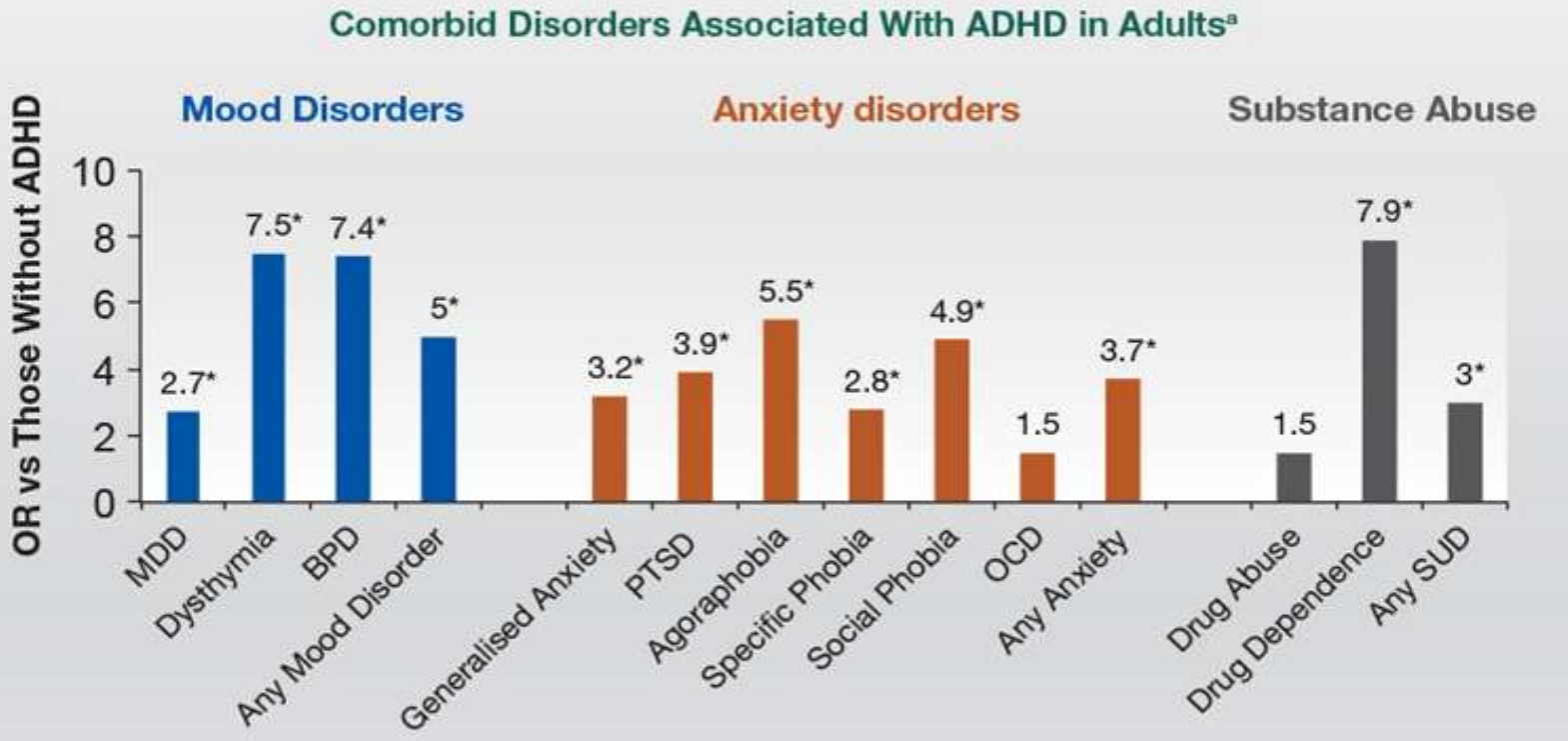


Figure 8 | **Quality of life and attention-deficit/hyperactivity disorder.** Throughout the lifetime of the patient, the impairments of attention-deficit/hyperactivity disorder manifest in psychiatric co-morbidities, health problems, psychological dysfunction, academic and occupational failure, social disability and risky behaviours.

Increased Prevalence of Comorbid Psychiatric Issues in Adults With ADHD[1]



* $P < .05$.

[a] A screen for adult ADHD was included in a probability sub-sample (n = 3,199) of 18-44 y old respondents in the National Comorbidity Survey Replication (NCS-R), a nationally representative household survey assessing a wide range of DSM-IV disorders. Blinded clinical follow-up interviews of adult ADHD were carried out with 154 NCS-R respondents, over-sampling those with a positive screen.

Kessler et al. Am J Psychiatry 2006)

Deberdt et al. BMC Psychiatry (2015) 15:242
DOI 10.1186/s12888-015-0624-5

BMC Psychiatry

RESEARCH ARTICLE Open Access

Prevalence of ADHD in nonpsychotic adult psychiatric care (ADPSYC): A multinational cross-sectional study in Europe

Walter Deberdt[1*], Johannes Thome[2], Jeremie Lebrec[3], Susanne Kraemer[3], Irene Fregenal[4], J. Antoni Ramos-Quiroga[5] and Muhammad Arif[6]

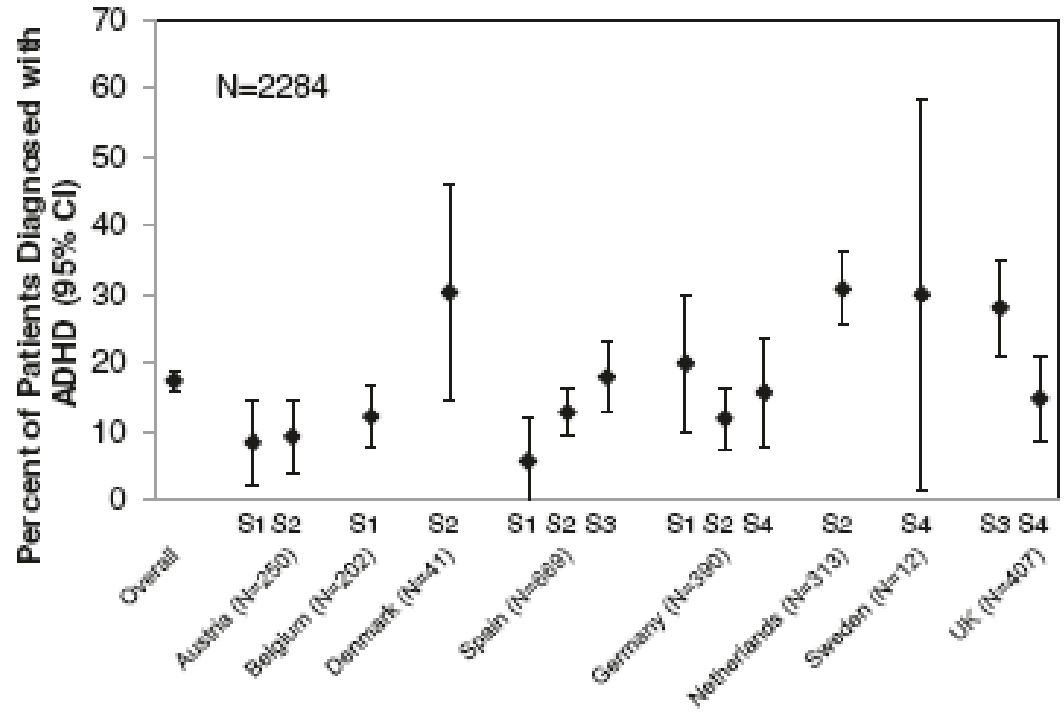


Fig. 2 ADHD prevalence in nonpsychotic psychiatric outpatients as determined by the DIVA according to criteria of the DSM-5, by country and setting. Abbreviations: ADHD = attention-deficit/hyperactivity disorder; CI = confidence interval; DIVA = Diagnostic Interview for ADHD in Adults; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, 5th Edition; N = number of patients; S1 = general psychiatry outpatient clinics linked to general hospitals; S2 = private psychiatric practices; S3 = community mental health centers; S4 = outpatient clinics of psychiatric hospitals; UK = United Kingdom

Clinical Psychology Review 31 (2011) 328–341

Clinical Psychology Review

Steve S. Lee [a,*], Kathryn L. Humphreys [a], Kate Flory [b], Rebecca Liu [a], Kerrie Glass [b]

Compared with control subjects without ADHD, children with ADHD were:

- 2x as likely to have a lifetime history of **nicotine** use (OR: 2.08, P < .001);
- nearly 3x more likely to report **nicotine** dependence in adolescence/adulthood (OR: 2.82, P < .001);
- almost 2x more likely to meet diagnostic criteria for **alcohol** use disorder (OR: 1.74, P < .001);
- approximately 1.5 times more likely to meet criteria for **cannabis** use disorder (OR: 1.58, P = .003);
- twice as likely to develop **cocaine** use disorder (OR: 2.05, P < .001); and
- more than 2.5 times more likely to develop an **SUD overall**.

Prevalence of attention-deficit hyperactivity disorder in substance use disorder patients: A meta-analysis and meta-regression analysis

Katelijne van Emmerik-van Oortmerssen[a,b,*], Geurt van de Glind[c], Wim van den Brink[b], Filip Smit[c,d], Cleo L. Crunelle[b,e], Marije Swets[a], Robert A. Schoevers[f,a]

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[b] Department of Psychiatry/Amsterdam Institute for Addiction Research, Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands
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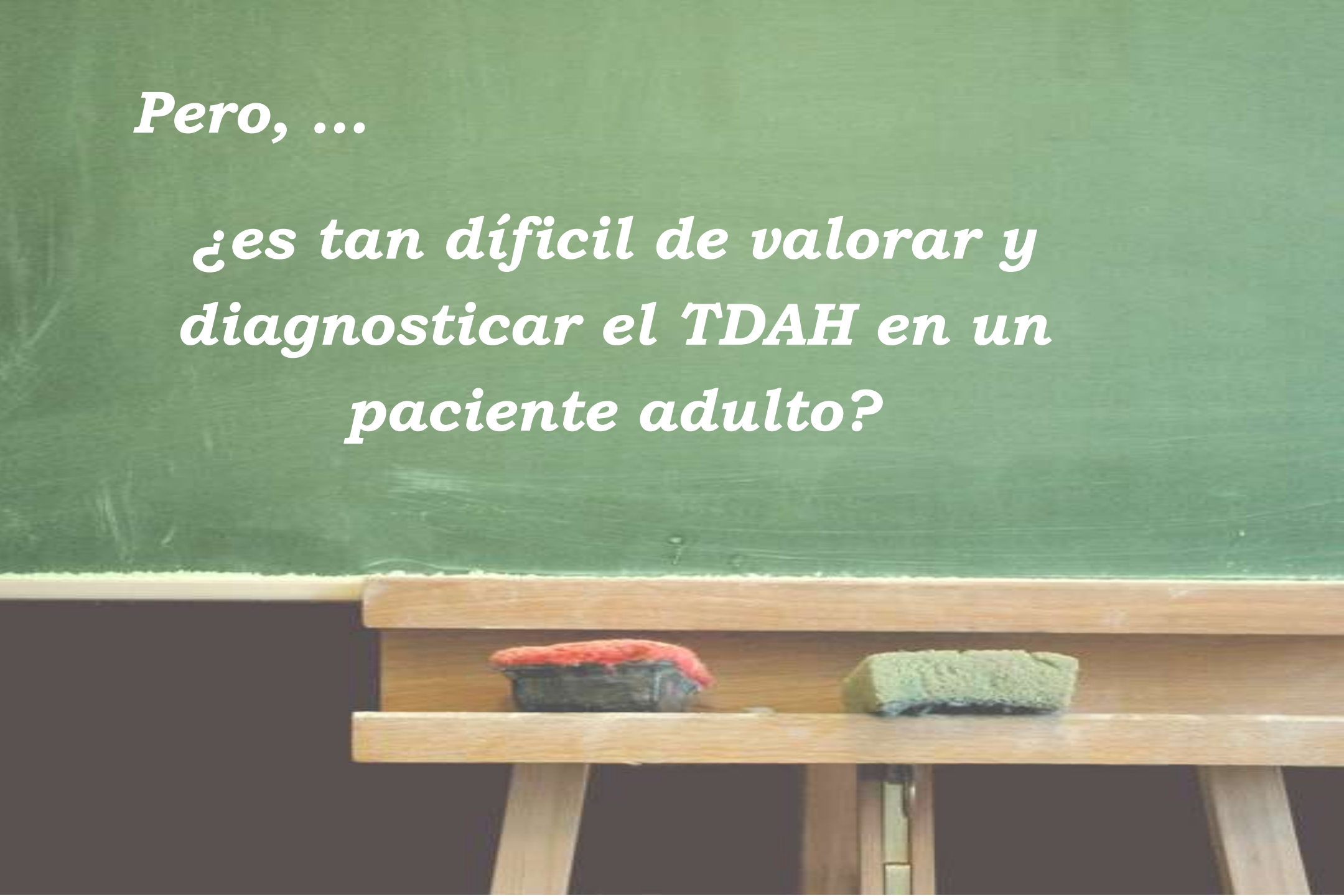
ABSTRACT

Context: Substance use disorders (SUD) are a major public health problem. Attention deficit hyperactivity disorder (ADHD) is a comorbid condition associated with both onset and prognosis of SUD. Prevalence estimates of ADHD in SUD vary significantly.
Objective: To obtain a best estimate of the prevalence of ADHD in SUD populations.
Data sources: A literature search was conducted using MEDLINE, PsycINFO and EMBASE. Search terms were ADHD, substance-related disorders, addiction, drug abuse, drug dependence, alcohol abuse, alcoholism, comorbidity, and prevalence. Results were limited to the English language.
Study selection: After assessing the quality of the retrieved studies, 29 studies were selected. Studies in which nicotine was the primary drug of abuse were not included.
Data extraction: All relevant data were extracted and analysed in a meta-analysis. A series of meta-regression analyses was performed to evaluate the effect of age, primary substance of abuse, setting and assessment procedure on the prevalence of ADHD in a variety of SUD populations.
Data synthesis: Overall, 23.1% (CI: 19.4–27.2%) of all SUD subjects met DSM-criteria for comorbid ADHD. Cocaine dependence was associated with lower ADHD prevalence than alcohol dependence, opioid dependence and other addictions. Studies using the DICA or the SADS-L for the diagnosis of ADHD showed significantly higher comorbidity rates than studies using the KSADS, DISC, DIS or other assessment instruments.
Conclusions: ADHD is present in almost one out of every four patients with SUD. The prevalence estimate is dependent on substance of abuse and assessment instrument.


Pero, ...
¿es tan díficil de valorar y diagnosticar el TDAH en un paciente adulto?

Attention-deficit/hyperactivity disorder

Stephen V. Faraone[1,2], Philip Asherson[3], Tobias Banaschewski[4], Joseph Biederman[5], Jan K. Buitelaar[6], Josep Antoni Ramos-Quiroga[7–9], Luis Augusto Rohde[10,11], Edmund J. S. Sonuga-Barke[12,13], Rosemary Tannock[14,15] and Barbara Franke[16]

Table 2 | **A selection of open access resources for assessing attention-deficit/hyperactivity disorder in adulthood**

Approach	Comments	Websites
Interviews		
Diagnostic Interview for Adult ADHD, second edition (DIVA 2.0)	• A structured diagnostic interview for ADHD in adults according to DSM-IV • A new version based on DSM-5 criteria is in press	http://www.divacenter.eu/DIVA.aspx
Adult (ACDS) v1.2	• A semi-structured interview of current symptoms of ADHD in adults • Provides age-specific prompts for rating both childhood and adulthood symptoms	Available from the author (Lenard Adler) at: http://www.med.nyu.edu/biosketch/adlerl01
Scales		
Adult ADHD Self-Report Scale (ASRS)	• Developed by WHO to measure ADHD symptoms in individuals >18 years of age • An 18-item version covers all DSM-IV symptoms of ADHD • A 6-item version is a screening tool validated for adolescents and adults • The 6-item version (ASRS-Telephone Interview Probes for Symptoms; ASRS-TIPS) uses semi-structured interview probes for examples of ADHD symptoms • Both versions have been translated into many languages	http://www.hcp.med.harvard.edu/ncs/asrs.php
Adult ADHD Investigator Symptom Rating Scale (AISRS)	• Incorporates suggested prompts for each ADHD item • Descriptors for each ADHD item are explicitly defined • Takes context into account	Available from Lenard Adler at: http://www.med.nyu.edu/biosketch/adlerl01
Wender Utah Rating Scale (WURS)	• Developed to retrospectively diagnose childhood ADHD in adults	Available from the authors[255]

La metáfora de la orquesta

TDAH PURO

Problema con el director

TDAH con COMORBILIDAD

Además tenemos problemas con uno o varios músicos

Brown TE. Attention Deficit Disorder: The Unfocused Mind in Children and Adults (Yale Press, 2005).

Medication/Stimulant Treatment and ADHD
Why does it matter?

- Does treatment with psychostimulants in childhood affect the risk of developing a SUD in adolescence or adulthood?
- Is there a potential risk of abusing psychostimulants prescribed for ADHD?
- Can psychostimualnts be safely and efficaciously used in treating patients with ADHD and a SUD?

Mortality in children, adolescents, and adults with attention deficit hyperactivity disorder: a nationwide cohort study

Søren Dalsgaard, Søren Dinesen Østergaard, James F Leckman, Preben Bo Mortensen, Marianne Giørtz Pedersen

www.thelancet.com Published online February 26, 2015 http://dx.doi.org/10.1016/S0140-6736(14)61684-6

Summary

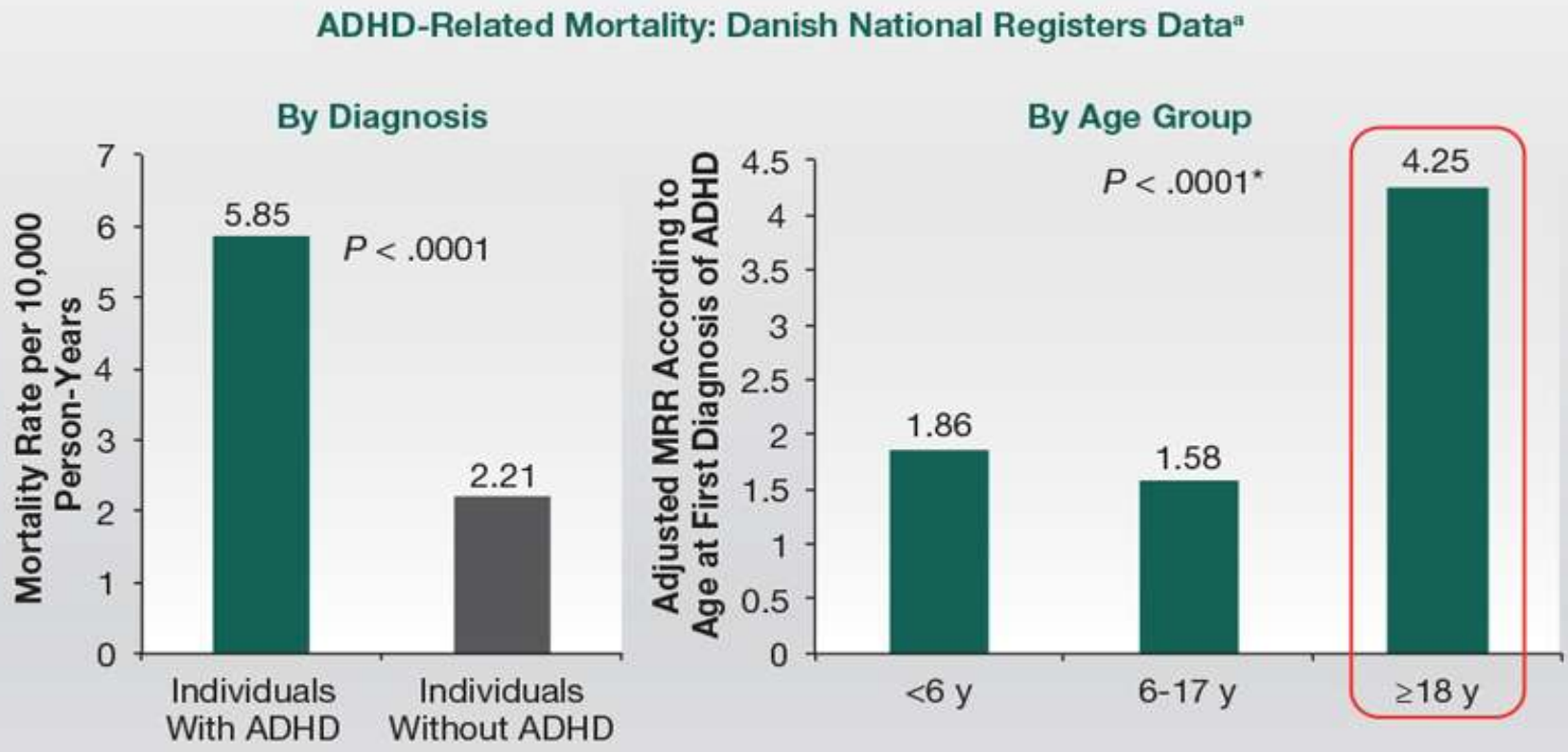
Background Attention deficit hyperactivity disorder (ADHD) is a common mental disorder associated with factors that are likely to increase mortality, such as oppositional defiant disorder or conduct disorder, criminality, accidents, and substance misuse. However, whether ADHD itself is associated with increased mortality remains unknown. We aimed to assess ADHD-related mortality in a large cohort of Danish individuals.

Methods By use of the Danish national registers, we followed up 1·92 million individuals, including 32 061 with ADHD, from their first birthday through to 2013. We estimated mortality rate ratios (MRRs), adjusted for calendar year, age, sex, family history of psychiatric disorders, maternal and paternal age, and parental educational and employment status, by Poisson regression, to compare individuals with and without ADHD.

Findings During follow-up (24·9 million person-years), 5580 cohort members died. The mortality rate per 10 000 person-years was 5·85 among individuals with ADHD compared with 2·21 in those without (corresponding to a fully adjusted MRR of 2·07, 95% CI 1·70–2·50; p<0·0001). Accidents were the most common cause of death. Compared with individuals without ADHD, the fully adjusted MRR for individuals diagnosed with ADHD at ages younger than 6 years was 1·86 (95% CI 0·93–3·27), and it was 1·58 (1·21–2·03) for those aged 6–17 years, and 4·25 (3·05–5·78) for those aged 18 years or older. After exclusion of individuals with oppositional defiant disorder, conduct disorder, and substance use disorder, ADHD remained associated with increased mortality (fully adjusted MRR 1·50, 1·11–1·98), and was higher in girls and women (2·85, 1·56–4·71) than in boys and men (1·27, 0·89–1·76).

Interpretation ADHD was associated with significantly increased mortality rates. People diagnosed with ADHD in adulthood had a higher MRR than did those diagnosed in childhood and adolescence. Comorbid oppositional defiant disorder, conduct disorder, and substance use disorder increased the MRR even further. However, when adjusted for these comorbidities, ADHD remained associated with excess mortality, with higher MRRs in girls and women with ADHD than in boys and men with ADHD. The excess mortality in ADHD was mainly driven by deaths from unnatural causes, especially accidents.

Link Between ADHD and Increased Mortality Risk[1]



* *P* value is overall effect of being diagnosed with ADHD at different ages vs individuals without ADHD.
[a] Follow-up (24.9 million person-years) of 1.92 million individuals, including 32,061 with ADHD from first birthday through 2013 using the Danish National registers.

Dalsgaard et al. Mortality in children, adolescents, and adults with attention deficit hyperactivity disorder: a nationwide cohort study. Lancet. 2015 Feb 26. pii: S0140-6736(14)61684-6. .

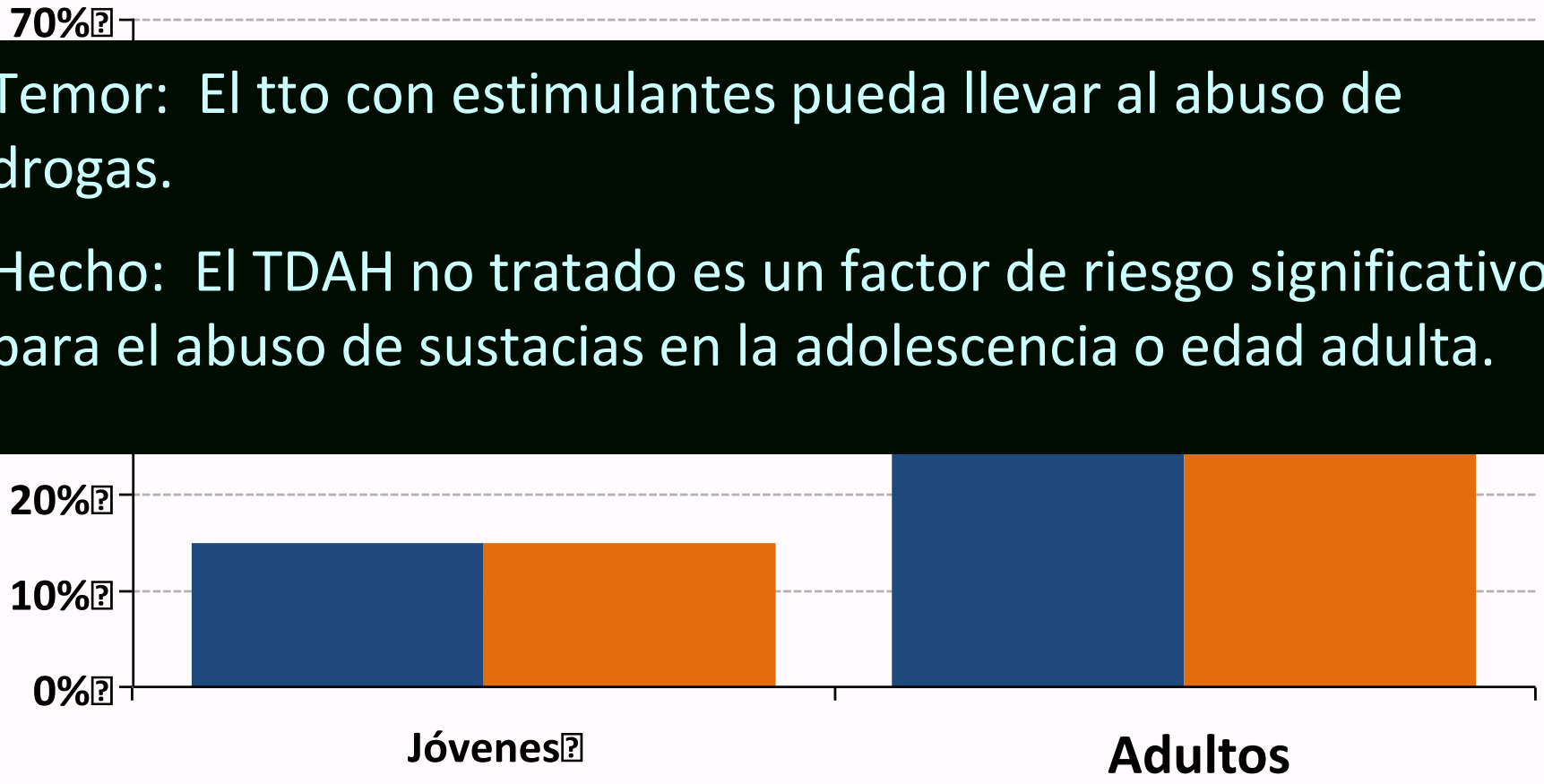
Stimulant Treatment and ADHD.
Why does it matter?

- Does treatment with psychostimulants in childhood affect the risk of developing a SUD in adolescence or adulthood?
- Is there a potential risk of abusing psychostimulants prescribed for ADHD?
- Can psychostimulants or other ADHD medications be safely and efficaciously used in treating patients with ADHD and a SUD?

TDAH
Riesgo de abuso de sustancias

Aumento drástico en abuso de sustancias entre la adolescencia media y la edad adulta

- Temor: El tto con estimulantes pueda llevar al abuso de drogas.
- Hecho: El TDAH no tratado es un factor de riesgo significativo para el abuso de sustacias en la adolescencia o edad adulta.



Does Stimulant Therapy of Attention-Deficit/Hyperactivity Disorder Beget Later Substance Abuse? A Meta-analytic Review of the Literature

Timothy E. Wilens, MD*‡; Stephen V. Faraone, PhD*‡; Joseph Biederman, MD*‡; and Samantha Gunawardene, BS*

ABSTRACT. *Objective.* **Concerns exist that stimulant therapy of youths with attention-deficit/hyperactivity disorder (ADHD) may result in an increased risk for subsequent substance use disorders (SUD). We investigated all long-term studies in which pharmacologically treated and untreated youths with ADHD were examined for later SUD outcomes.**

Methods. **A search of all available prospective and retrospective studies of children, adolescents, and adults with ADHD that had information relating childhood exposure to stimulant therapy and later SUD outcome in adolescence or adulthood was conducted through PubMed supplemented with data from scientific presentations. Meta-analysis was used to evaluate the relationship between stimulant therapy and subsequent SUD in youths with ADHD in general while addressing specifically differential effects on alcohol use disorders or drug use disorders and the potential effects of covariates.**

Results. **Six studies—2 with follow-up in adolescence and 4 in young adulthood—were included and comprised 674 medicated subjects and 360 unmedicated subjects who were followed at least 4 years. The pooled estimate of the odds ratio indicated a 1.9-fold reduction in risk for SUD in youths who were treated with stimulants compared with youths who did not receive pharmacotherapy for ADHD ($z = 2.1$; 95% confidence interval for odds ratio [OR]: 1.1–3.6). We found similar reductions in risk for later drug and alcohol use disorders ($z = 1.1$). Studies that reported follow-up into adolescence showed a greater protective effect on the development of SUD (OR: 5.8) than studies that followed subjects into adulthood (OR: 1.4). Additional analyses showed that the results could not be accounted for by any single study or by publication bias.**

Conclusion. **Our results suggest that stimulant therapy in childhood is associated with a reduction in the risk for subsequent drug and alcohol use disorders.**
Pediatrics* 2003;111:179–185; *attention-deficit/hyperactivity disorder, substance use, pharmacotherapy.

ABBREVIATIONS. ADHD, attention-deficit/hyperactivity disorder; SUD, substance use disorders; OR, odds ratio; POR, precision of the odds ratio; SN, standard normal deviate; CI, confidence interval;

Attention-deficit/hyperactivity disorder (ADHD) is the most common neurobehavioral disorder that is presented for treatment. It is estimated to affect from 4% to 9% of youths.[1–3] Pharmacotherapy in general and stimulants in particular remain a mainstay of treatment for ADHD.[3–7] Data from >200 randomized clinical trials have consistently documented that stimulant drugs are highly effective in the treatment of youths and adults with ADHD.[4–7] A recently published large multisite and randomized study documented the essential role that medication treatment plays in the long-term treatment of children with ADHD.[8]

Despite stimulants' well-documented efficacy in the treatment of ADHD, concerns remain as to whether their use in youths with ADHD could increase the risk for substance use disorders (SUD; denoting drug or alcohol abuse or dependence).[9–13] Although a recent report by our group showed that anti-ADHD pharmacotherapy protected youths with ADHD from later SUD,[14] another study reported just the opposite: cocaine and nicotine abuse were associated with previous stimulant treatment.[15] These contradictory findings call for additional efforts to help resolve this critical issue.

Original Investigation | META-ANALYSIS

Stimulant Medication and Substance Use Outcomes
A Meta-analysis

Kathryn L. Humphreys, MA, EdM; Timothy Eng, BS; Steve S. Lee, PhD

JAMA Psychiatry. 2013;70(7):740-749. doi:10.1001/jamapsychiatry.2013.1273

- Meta-analysis of longitudinal studies evaluating the association between treatment with stimulant drugs during childhood and the risk of of developing a SUD.

- The evolution in the consumption and abuse / dependence of alcohol, cocaine, cannabis, nicotine, and other drugs in **2565 subjects from 15 different studies** was evaluated.

- Aggregate data did **not evidence that stimulants increase substance use or the risk of addiction**. However, they also do not show that they reduce risk, as indicated by previous meta-analyzes.

Original Investigation | META-ANALYSIS

Stimulant Medication and Substance Use Outcomes
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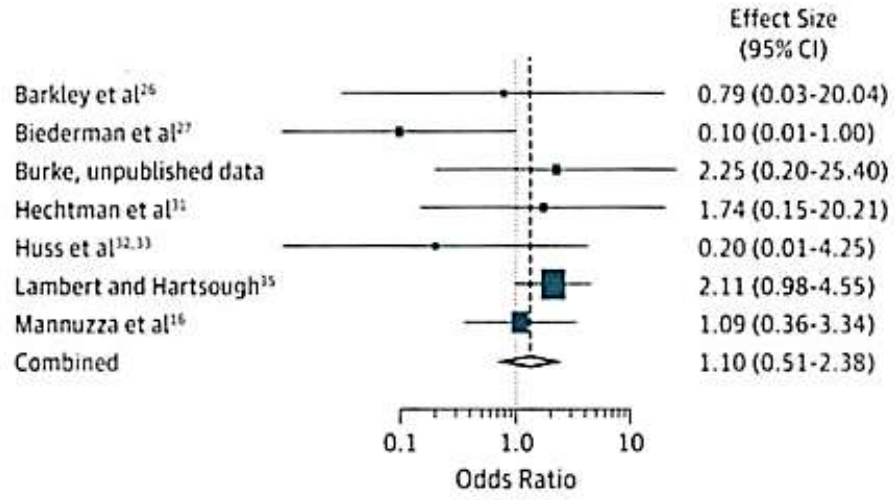
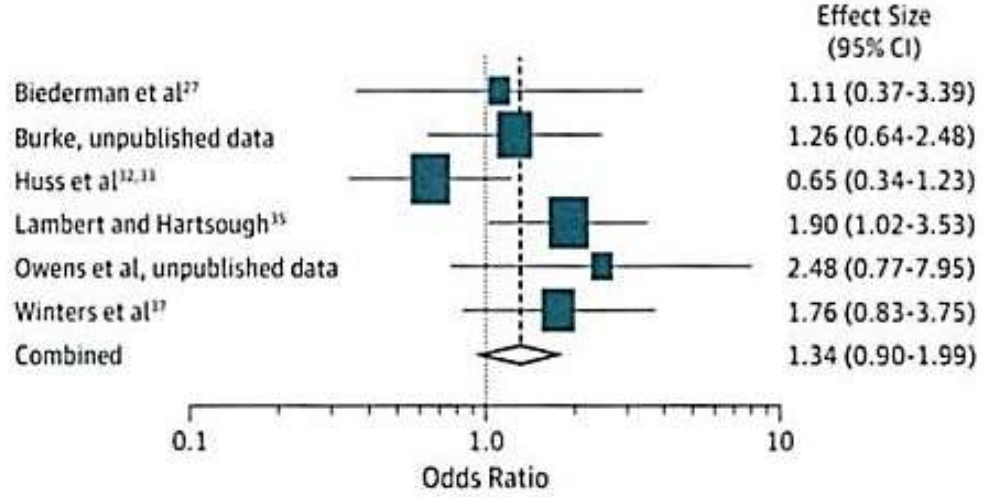
Figure 2. Cocaine Abuse or Dependence



Effect of medication treatment on the risk of cocaine abuse or dependence in

Figure 4. Nicotine Dependence



Effect of medication treatment on the risk of nicotine dependence in children with attention-deficit/hyperactivity disorder.

THE JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY

ACAMH THE ASSOCIATION FOR CHILD AND ADOLESCENT MENTAL HEALTH

Journal of Child Psychology and Psychiatry 55:8 (2014), pp 878–885 doi:10.1111/jcpp.12164

Stimulant ADHD medication and risk for substance abuse

Zheng Chang,[1] Paul Lichtenstein,[1] Linda Halldner,[1,2] Brian D'Onofrio,[3] Eva Serlachius,[4] Seena Fazel,[5] Niklas Långström,[1] and Henrik Larsson[1]

[1]Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden; [2]Karolinska Institutet Center of Neurodevelopmental Disorders (KIND), Stockholm, Sweden; [3]Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN, USA; [4]Department of Clinical Neuroscience, Centre for Psychiatric Research and Education, Karolinska Institutet, Stockholm, Sweden; [5]Department of Psychiatry, University of Oxford, Oxford, UK

Background: There are persistent concerns of long-term effects of stimulant ADHD medication on the development of substance abuse. **Methods:** Using Swedish national registers, we studied all individuals born between 1960 and 1998 and diagnosed with ADHD (26,249 men and 12,504 women). We investigated the association between stimulant ADHD medication in 2006 and substance abuse during 2009. Substance abuse was indexed by substance-related death, crime, or hospital visits. **Results:** ADHD medication was not associated with increased rate of substance abuse. Actually, the rate during 2009 was 31% lower among those prescribed ADHD medication in 2006, even after controlling for medication in 2009 and other covariates (hazard ratio: 0.69; 95% confidence interval: 0.57–0.84). Also, the longer the duration of medication, the lower the rate of substance abuse. Similar risk reductions were suggested among children and when investigating the association between stimulant ADHD medication and concomitant short-term abuse. **Conclusions:** We found no indication of increased risks of substance abuse among individuals prescribed stimulant ADHD medication; if anything, the data suggested a long-term protective effect on substance abuse. Although stimulant ADHD medication does not seem to increase the risk for substance abuse, clinicians should remain alert to the potential problem of stimulant misuse and diversion in ADHD patients.
Keywords: ADHD, pharmacology, substance abuse.

THE AMERICAN JOURNAL OF
PSYCHIATRY

ADHD Medication and Substance-Related Problems

Patrick D. Quinn, Ph.D., Zheng Chang, Ph.D., Kwan Hur, Ph.D., Robert D. Gibbons, Ph.D., Benjamin B. Lahey, Ph.D., Martin E. Rickert, Ph.D., Arvid Sjölander, Ph.D., Paul Lichtenstein, Ph.D., Henrik Larsson, Ph.D., Brian M. D'Onofrio, Ph.D.

Objective: Substance use disorders are major contributors to excess mortality among individuals with attention deficit hyperactivity disorder (ADHD), yet associations between pharmacological ADHD treatment and substance-related problems remain unclear. This study investigated concurrent and long-term associations between ADHD medication treatment and substance-related events.

Method: The authors analyzed 2005–2014 commercial health care claims from 2,993,887 (47.2% female) adolescent and adult ADHD patients. Within-individual analyses compared the risk of substance-related events (i.e., emergency department visits related to substance use disorders) during months in which patients received prescribed stimulant medication or atomoxetine relative to the risk during months in which they did not.

Results: In adjusted within-individual comparisons, relative to periods in which patients did not receive ADHD medication, male patients had 35% lower odds of concurrent substance-related events when receiving medication (odds ratio=0.65, 95% CI=0.64–0.67), and female patients had 31% lower odds of concurrent substance-related events (odds ratio=0.69, 95% CI=0.67–0.71). Moreover, male patients had 19% lower odds of substance-related events 2 years after medication periods (odds ratio=0.81, 95% CI=0.78–0.85), and female patients had 14% lower odds of substance-related events 2 years after medication periods (odds ratio=0.86, 95% CI= 0.82–0.91). Sensitivity analyses supported most findings but were less consistent for long-term associations among women.

Conclusions: These results provide evidence that receiving ADHD medication is unlikely to be associated with greater risk of substance-related problems in adolescence or adulthood. Rather, medication was associated with lower concurrent risk of substance-related events and, at least among men, lower long-term risk of future substance-related events.

AJP in Advance (doi: 10.1176/appi.ajp.201716060686)

¿La medicación del TDAH es un factor de riesgo para el abuso de sustancias?

- Parece claro que **los fármacos estimulantes no aumentan el riesgo de abuso de sustancias**, pero no está plenamente claro si disminuyen el riesgo de desarrollar un trastorno adictivo.
- Diversos aspectos de los estudios limitan extraer conclusiones claras:
  - La edad variable de inicio en el uso de estimulantes,
  - las diferencias en los períodos de seguimiento,
  - la falta de control sobre la comorbilidad,

(Humphreys et al., *JAMA Psychiatry*, 2013)

Stimulant Treatment and ADHD.
Why does it matter?

- Does treatment with psychostimulants in childhood affect the risk of developing a SUD in adolescence or adulthood?
- Is there a potential risk of abusing psychostimulants prescribed for ADHD?
- Can psychostimulants or other ADHD medications be safely and efficaciously used in treating patients with ADHD and a SUD?

"trade you my Ritalin for your Dexedrine"

Una cosa es que no aumente el riesgo de desarrollar una adicción, pero, …

¿Son los fármacos suspectibles de abuso?

Is there a risk of abuse or misuse of prescription stimulants?

- It is one of the arguments not to prescribe these medications.
- What is the relevance of misuse?
- From a scientific perspective, what factors explain the misuse of of prescription stimlants?

- **<u>"Misuse"</u> is not the same as abuse**
- All cases of abuse are associated with **short-acting stimulants**
  - Methylphenidate
  - Anfetamines
- **Very little evidence of abuse or misuse with:**
  - Long-acting formulations
  - Non-stimulant medications

American Academy of Pediatrics
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Attention-Deficit/Hyperactivity Disorder and Substance Abuse

Elizabeth Harstad, MD, MPH, FAAP, Sharon Levy, MD, MPH, FAAP, and COMMITTEE ON SUBSTANCE ABUSE

TABLE 1 List of Most Commonly Used Medications for ADHD With Suspected Relative Abuse Potential

Stimulant Status	Medication Type	US Trade Name[a]	Suspected Relative Abuse Potential[b]
Stimulants			
Short-acting/immediate release	Methylphenidate	Ritalin[a]	High
		Methylin[a]	High
	Dexmethylphenidate	Focalin[a]	High
	Amphetamine-dextroamphetamine	Adderall[a]	High
	Dextroamphetamine	Dexedrine	High
		DextroStat[a]	High
		ProCentra	High
LA/ER	Methylphenidate	Metadate CD	Medium
		Metadate ER[a]	Medium
		Ritalin LA[a]	Medium
		Ritalin SR[a]	Medium
		Methylin ER	Medium
		Daytrana patch	Low
		Concerta[a]	Low
		Quillivant XR	Low
	Dexmethylphenidate	Focalin XR	Low
	Dextroamphetamine	Dexedrine Spansule[a]	Medium
	Amphetamine-dextroamphetamine	Adderall XR[a]	Medium
	Lisdexamfetamine	Vyvanse	Low
Nonstimulants			
α_2-adrenergic agonists	Guanfacine	Intuniv	Low
	Clonidine	Kapvay	Low
Selective norepinephrine reuptake inhibitor	Atomoxetine	Strattera	Low

CR, controlled release; ER, extended release; LA, long acting; XR, extended release; SR, sustained release.

[a] Indicates that generic formulation is available.

[b] Relative abuse potential is suspected based on length of action and formulation of medication.

Stimulant Treatment and ADHD.
Why does it matter?

- Does treatment with psychostimulants in childhood affect the risk of developing a SUD in adolescence or adulthood?
- Is there a potential risk of abusing psychostimulants prescribed for ADHD?
- Can psychostimulants or other ADHD medications be safely and efficaciously used in treating patients with ADHD and a SUD?

Tabla 11. Metilfenidato en el tratamiento de pacientes con TDAH y TCS dual

Autores y año	Tipo de estudio	Comparador	Terapia asociada	Dosis diaria	Muestra	Duración *	Hallazgos principales
Levin et al, 1998 [299]	Abierto	Ninguno	TPR	40-80 mg [a]	12 adultos con TDAH y dependencia de cocaína	12 semanas	8 sujetos completaron el estudio. Mejoría en síntomas de TDAH y reducción en el *craving* y en el consumo de cocaína
Castaneda et al, 1999 [298]	Abierto	FLX, BUP, MTF-LP, d-anfetamina, metanfetamina	Ninguna	20-120 mg	19 adultos con TDAH y dependencia de cocaína	52 semanas	El MTF-LP en monoterapia fue el tratamiento más eficaz en reducir los síntomas de TDAH, sin recaídas en la dependencia de cocaína
Schubiner et al, 2002 [308]	ECACP (doble ciego)	PBO	TCC grupal e individual semanal	30-90 mg [a]	48 adultos (18-55 años de edad) con TDAH y dependencia de cocaína	12 semanas	Mejoría en síntomas de TDAH con MTF vs PBO mediante escala de síntomas de TDAH tanto según el clínico (p<0,005) y según el sujeto (p<0,05). Sin diferencias en el consumo, urinoanálisis y *craving* de cocaína entre ambos tratamientos
Somoza et al, 2004 [300]	Abierto, multicéntrico	Ninguno	TPR	20-60 mg [a]	41 adultos (21-50 años de edad) con TDAH y dependencia de cocaína	10 semanas	70% completaron el estudio. Buena tolerabilidad del MTF, con mejoría de síntomas de TDAH evidenciado mediante la ICG y de la dependencia de cocaína
Carpentier et al, 2005 [303]	ECACP y cruzado (doble ciego)	PBO	Ninguna	15-45 mg [a] (dosis media: 34 mg/d)	25 adultos (em: 31,9 años) con TDAH y un TUS (ingresados en una unidad de adicciones)	8 semanas	19 sujetos completaron el estudio. Mejoría significativa en síntomas de TDAH en la AARS (P<0.01), la EOC (P<0,01) y la ICG (P<0,01) desde la primera semana, con MTF y con PBO. Más EAM con MTF que con PBO (p<0,05)
Levin et al, 2006 [306]	ECACP (doble ciego)	MTF-LP vs. BUP vs. PBO	TCC individual	10-80 mg (dosis media: 77 mg/d)	98 adultos (18-60 años de edad) con TDAH y dependencia de opiáceos en TMM	12 semanas	70% completaron el estudio. Mejoría general en los síntomas de TDAH (reducción del 30% en la AARS y ICG<3) sin diferencias significativos entre MTF, BUP o PBO (tasa de respuesta con PBO: 46%)
Levin et al, 2007 [307]	ECACP (doble ciego)	MTF-LP vs. PBO	TCC individual	10-60 mg	106 adultos (23-52 años de edad; em: 37 años) con TDAH y dependencia de cocaína	14 semanas	Mejoría >30% en síntomas de TDAH (reducción del 30% en la AARS y ICG<3) en mayoría de pacientes, similar en ambos grupos (55% MTF vs 47% PBO). La mejoría de síntomas de TDAH con el MTF, no así con PBO, se asoció con reducción en el consumo de cocaína.
Szobot et al, 2008 [302]	ECACP y cruzado	MTF-SODAS vs. PBO	Ninguna	0,3-1,2 mg/kg/día	16 adolescentes varones (15-21 años de edad; em:	6 semanas	Mejoría significativa en síntomas de TDAH (según la SNAP-IV y la ICG) con MPH-SODAS vs. PBO (p<0,001). Ausencia de efectos significativos

	(ciego simple)				17,5 años) con TDAH y TUS		sobre el consumo. Buena tolerabilidad de MTF-SODAS.
Konstenius et al, 2010 [304]	ECACP (doble ciego)	MTF-OROS vs. PBO	TPR	18-72 mg	24 pacientes adultos (18-65 años de edad; em: 37.4 años) con TDAH y dependencia de anfetaminas	13 semanas	Mejoría significativa en síntomas de TDAH según la CAARS-AA y CAARS-C, en el consumo de sustancias (objetivado por urinoanálisis), en tiempo hasta la recaída y en *craving;* similar en ambos grupos. Buena tolerabilidad de MTF-OROS.
Winhusen et al., 2010 [309]	ECACP (doble ciego), multicéntrico	MTF-OROS + TTN vs. PBO + TTN	TTN + TB para dejar de fumar	18-72 mg	255 adultos (18-55 años de edad; em: 38 años) con TDAH y dependencia de nicotina	15 semanas	Reducción de síntomas de TDAH (reducción 30% en la AARS, p<0,0001 y en la escala de gravedad de la ICG, p<0,01) con MTF-OROS vs. PBO. Tasas de abstinencia tabáquica prolongada similares con MTF-OROS (43.3%) y PBO (42.2%). Buena tolerabilidad de MTF-OROS. Mayor reducción en CPD con MTF-OROS vs. PBO (p<0,02).
Riggs et al., 2011 [301]	ECACP (doble ciego), multicéntrico	MTF-OROS + TCC vs. PBO + TCC	TCC	18-72 mg	303 adolescentes (13-18 años de edad) con TDAH + TUS	16 semanas	Reducción significativa en la AARS o en la ICG con MTF-OROS y PBO. Disminución significativa en el consumo con MTF-OROS y PBO. Significativamente mayor orinas negativas con MTF y PBO (p < 0,05). Buena tolerabilidad del MTF-OROS.
Konstenius et al., 2014 [305]	ECACP (doble ciego)	MTF-OROS vs. PBO	TCC individual	18-180 mg	54 adultos (18-65 años de edad; em: 42 años) con TDAH y dependencia de anfetaminas	24 semanas	Mayor mejoría en síntomas de TDAH con MTF vs. PBO mediante la CAARS-AA (p < 0,005). Reducción de al menos 30% en síntomas de inatención o hiperactividad en 17 pacientes del grupo MTF vs. 7 del grupo PBO (p < 0,05). Reducción significativa en ICG de gravedad con MTF, pero no con PBO. Mayor proporción de orinas negativas con MTF vs. PBO (p < 0,05); no hubieron diferencias en el *craving* entre los dos grupos. EAM leves a moderados.

* Indica duración del estudio; em: edad media

[a] Metilfenidato (MTF) de liberación inmediata;

ECACP: ensayo clínico aleatorizado y controlado con placebo

PBO: Placebo; FLX: Fluoxetina; BUP: Bupropion; TTN: Terapia transdérmica con nicotina; TMM: tratamiento de mantenimiento con metadona

MTF-LP: Metilfenidato de liberación prolongada; MTF- OROS: Metilfenidato de liberación controlada mediante sistema por presión osmótica (OROS)

MTF-SODAS: Metilfenidato de liberación prolongada mediante sistema de absorción de fármacos por vía oral en partículas esferoidales (SODAS)

CPD: Cigarrillos por día

TCC: Terapia cognitivo conductual; TPR: Terapia de prevención de recaídas; TB: Terapia breve

EAM: Efectos adversos medicamentosos

AARS: Adult ADHD rating scale; CAARS: Conners Adult ADHD Rating Scale (CAARS-AA: CAARS auto-aplicada; CAARS-C: CAARS administrada por el clínico); EOC: Escala de Observación Clínica; ICG: Escala de Impresión clínica global; SNAP-IV = Swanson, Nolan, and Pelham Scale, version IV.

Tabla 12. Ensayos clínicos de derivados anfetamínicos en el tratamiento de pacientes con TDAH y TCS dual

Autores y año	Tipo de estudio	Comparador	Terapia asociada	Dosis diaria	Muestra	Duración *	Hallazgos principales
Kollins et al, 2014 [310]	ECACP (doble ciego)	LDX vs PBO	Parche de nicotina	30-70 mg	32 adultos (18-50 años de edad media: 31,6 años) con TDAH y dependencia de nicotina	28 días	Reducción en el número de cigarillos/día con LDX y con PBO (p <0,0001). Mejoría significativa en síntomas de TDAH según la CAARS-C (p=0,01) y en la CAARS-AA (p=0,001) sólo con LDX. Buena tolerabilidad de la LDX.
Levin et al, 2015 [311]	ECACP (doble ciego),	SMA-LP vs PBO	TCC individual semanal	60 mg vs. 80 mg	126 adultos (18-60 años de edad) con TDAH y trastorno por consumo de cocaína	13 semanas	Se observó que comparado con el 39,5% en el grupo placebo, un Significativamente mayor número de pacientes en el grupo SMA-LP 60 mg (75,0%; OR=5,23) y en el grupo SMA-LP 80 mg (58,1%; OR=2,27) que en el grupo PBO alcanzaron al menos una reducción del 30% en la gravedad de los síntomas de TDAH (según la AISRS). Tasas de abstinencia continuada en las 3 semanas previas significativamente mayores con SMA-LP 80 mg (30,2%; OR=11,87) y con SMA-LP 60 mg (17,5%; OR=5,85) que con PBO (7,0%). Significativa mayor proporción de semanas con orinas negativas con SMA-LP 80 mg (OR=5,46) y con SMA-LP 60 mg (OR=2,92) que con PBO. Las sales de anfetamina fueron bien toleradas.

ECACP: ensayo clínico aleatorizado y controlado con placebo
PBO: Placebo; LDX: Lisdexanfetamina; SMA-LP: sales mixtas de anfetamina de liberación prolongada
AISRS: Adult ADHD Investigator Symptom Rating Scale; CAARS: Conners Adult ADHD Rating Scale (CAARS-AA: CAARS auto-aplicada; CAARS-C: CAARS administrada por el clínico).

Atomoxetina en el tratamiento del TDAH + TUS

TABLE 2. Atomoxetine in the Treatment of Patients With ADHD and Comorbid SUD

References	Study Design	Comparison	Adjunctive Therapy	Dose	Sample	Duration (wk)*	Key Findings
Wilens et al[71]	RCT (double-blind)	PLC	None	100†	147 adults with ADHD+ alcohol abuse or dependence	12	Significant improvement of ADHD symptoms and significant reduction of heavy alcohol use in the ATMX cohort compared with placebo. Good tolerability of ATMX
Levin et al[72]	Open-label	None	CBT	100†	20 adult patients with ADHD+ cocaine dependence	12	Significant reduction in ADHD symptoms. No effects on cocaine use. 2 subjects discontinued ATMX because of MAE
McRae-Clark et al[73]	RCT (double-blind)	PLC	MI	100†	38 adults with ADHD + cannabis dependence	12	Significantly greater improvement of some ADHD symptoms with ATMX compared with PLC. No differences in marijuana use. The majority of MAE were mild to moderate in severity
Thurstone et al[74]	RCT (double-blind)	ATMX vs. PLC	MI/CBT	100†	70 adolescents (13-19 y of age) with ADHD+ comorbid SUD	16	No significant differences in ADHD scores or in substance use between ATMX and PLC. Rates of MAE were generally mild and short-lived
Adler et al[75]	Open-label	None	Residential rehab	120†	18 adult polysubstance users + ADHD	10	12 residents completed ≥2 wk of treatment. ATMX was well tolerated and associated with improvement of ADHD symptoms and in some measures of craving

* Indica duración del estudio

[a] dosis máxima de metilfenidato

ECACP: ensayo clínico aleatorizado y controlado con placebo

PLC: Placebo; ATMX: Atomoxetina; EAM: Efectos adversos de la medicación

EM: Entrevista Motivacional; TCC: Terapia cognitivo conductual; TPR: Terapia de prevención de recaídas

Addiction

RESEARCH REPORT

doi:10.1111/add.12369

Maija Konstenius[1], Nitya Jayaram-Lindström[1], Joar Guterstam[1], Olof Beck[2], Björn Philips[3] & Johan Franck[1]

Methylphenidate for attention deficit hyperactivity disorder and drug relapse in criminal offenders with substance dependence: a 24-week randomized placebo-controlled trial

Aim To test the efficacy and safety of osmotic release oral system (OROS) methylphenidate (MPH) in doses up to 180 mg/day to treat attention deficit hyperactivity disorder (ADHD) and prevent any drug relapse in individuals with a co-diagnosis of ADHD and amphetamine dependence. **Design** Randomized placebo-controlled 24-week double-blind trial with parallel groups design. **Setting** Participants were recruited from medium security prisons in Sweden. The medication started within 2 weeks before release from prison and continued in out-patient care with twice-weekly visits, including once-weekly cognitive behavioural therapy. **Participants** Fifty-four men with a mean age of 42 years, currently incarcerated, meeting DSM-IV criteria for ADHD and amphetamine dependence. **Measurements** Change in self-reported ADHD symptoms, relapse to any drug use (amphetamine and other drugs) measured by urine toxicology, retention to treatment, craving and time to relapse. **Findings** The MPH-treated group reduced their ADHD symptoms during the trial ($P = 0.011$) and had a significantly higher proportion of drug-negative urines compared with the placebo group ($P = 0.047$), including more amphetamine-negative urines ($P = 0.019$) and better retention to treatment ($P = 0.032$). **Conclusions** Methylphenidate treatment reduces attention deficit hyperactivity disorder symptoms and the risk for relapse to substance use in criminal offenders with attention deficit hyperactivity disorder and substance dependence.

Addiction
RESEARCH REPORT
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Maija Konstenius[1], Nitya Jayaram-Lindström[1], Joar Guterstam[1], Olof Beck[2], Björn Philips[3] & Johan Franck[1]

Methylphenidate for attention deficit hyperactivity disorder and drug relapse in criminal offenders with substance dependence: a 24-week randomized placebo-controlled trial

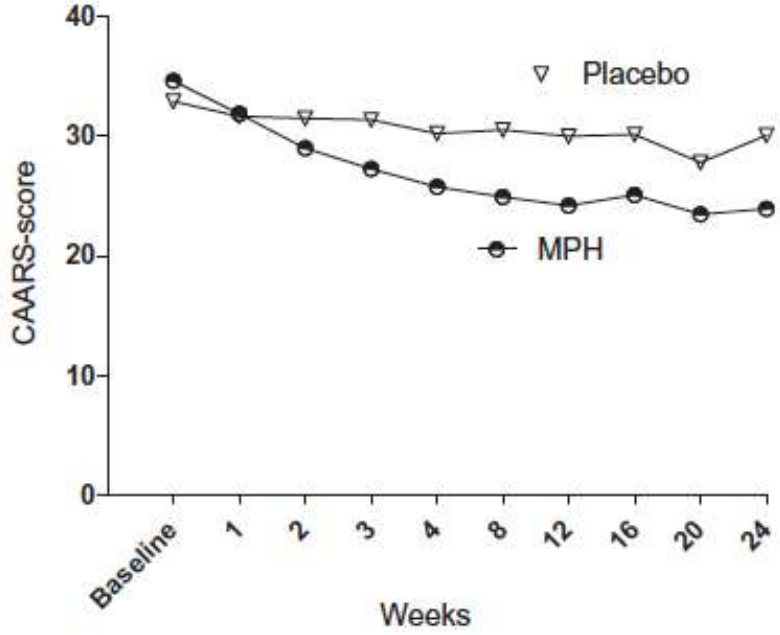

Figure 2 Change in self-rated attention deficit hyperactivity disorder (ADHD) symptoms (95% confidence interval = −13.78 to −1.91, $P = 0.011$)

- 54 abstinent adults with ADHD. Started medication 2 weeks prior to release from prison
- Doses up to 180 mg/day, 24 week trial
- Greater retention for those on MPH. However, high drop-out, particularly the first few weeks

Addiction

RESEARCH REPORT

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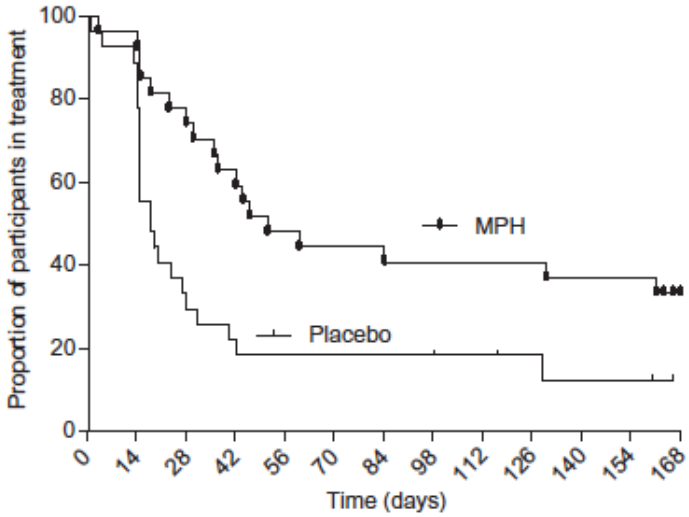

Figure 4 Kaplan–Meier curve for retention in treatment through to last visit at the clinic [methylphenidate (MPH): Md = 51, placebo: Md = 18; hazard ratio 0.38, 95% confidence interval = 0.174–0.647]

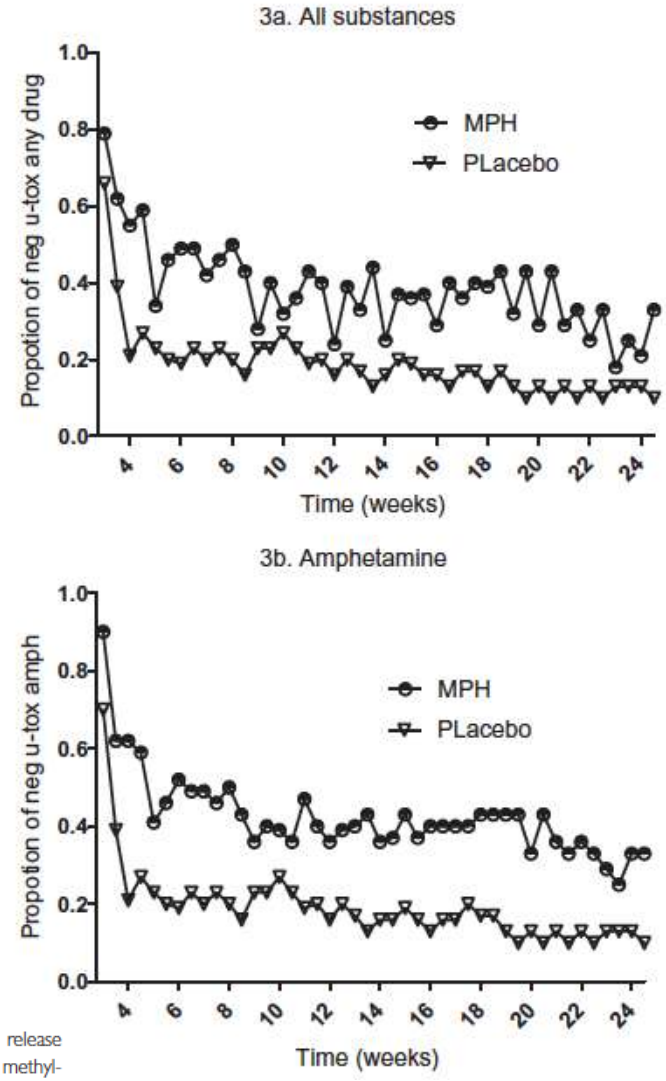

Figure 3 Proportion of negative urine-toxicology after release from prison (weeks 3–24) for the two treatment groups; methylphenidate (MPH) and placebo over 24 weeks of treatment: (a) any drugs amphetamine + other drugs, mean difference 95% confidence interval (CI) = 0.05–0.32; (b) amphetamines only, mean difference 95% CI = 0.07–0.36; and (c) other drugs, mean difference 95% CI = 0.02–0.25

Extended-Release Mixed Amphetamine Salts vs Placebo for Comorbid Adult Attention-Deficit/Hyperactivity Disorder and Cocaine Use Disorder

A Randomized Clinical Trial

JAMA Psychiatry. 2015;72(6):593-602. doi:10.1001/jamapsychiatry.2015.41

Frances R. Levin, MD; John J. Mariani, MD; Sheila Specker, MD; Marc Mooney, PhD; Amy Mahony, LMHC; Daniel J. Brooks, MA; David Babb, BA; Yun Bai, MS; Lynn E. Eberly, PhD; Edward V. Nunes, MD; John Grabowski, PhD

IMPORTANCE Adult attention-deficit/hyperactivity disorder (ADHD) is prevalent but often unrecognized, in part because it tends to co-occur with other disorders such as substance use disorders. Cocaine use disorder is one such disorder with high co-occurrence of ADHD.

OBJECTIVE To examine whether treatment of co-occurring ADHD and cocaine use disorder with extended-release mixed amphetamine salts is effective at both improving ADHD symptoms and reducing cocaine use.

DESIGN, SETTING, AND PARTICIPANTS Thirteen-week, randomized, double-blind, 3-arm, placebo-controlled trial of participants meeting *DSM-IV-TR* criteria for both ADHD and cocaine use disorder conducted between December 1, 2007, and April 15, 2013, at 2 academic health center substance abuse treatment research sites. One hundred twenty-six adults diagnosed as having comorbid ADHD and cocaine use disorder were randomized to extended-release mixed amphetamine salts or placebo. Analysis was by intent-to-treat population.

INTERVENTIONS Participants received extended-release mixed amphetamine salts (60 or 80 mg) or placebo daily for 13 weeks and participated in weekly individual cognitive behavioral therapy.

MAIN OUTCOMES AND MEASURES For ADHD, percentage of participants achieving at least a 30% reduction in ADHD symptom severity, measured by the Adult ADHD Investigator Symptom Rating Scale; for cocaine use, cocaine-negative weeks (by self-report of no cocaine use and weekly benzoylecgonine urine screens) during maintenance medication (weeks 2-13) and percentage of participants achieving abstinence for the last 3 weeks.

RESULTS More patients achieved at least a 30% reduction in ADHD symptom severity in the medication groups (60 mg: 30 of 40 participants [75.0%]; odds ratio [OR] = 5.23; 95% CI, 1.98-13.85; $P < .001$; and 80 mg: 25 of 43 participants [58.1%]; OR = 2.27; 95% CI, 0.94-5.49; $P = .07$) compared with placebo (17 of 43 participants [39.5%]). The odds of a cocaine-negative week were higher in the 80-mg group (OR = 5.46; 95% CI, 2.25-13.27; $P < .001$) and 60-mg group (OR = 2.92; 95% CI, 1.15-7.42; $P = .02$) compared with placebo. Rates of continuous abstinence in the last 3 weeks were greater for the medication groups than the placebo group: 30.2% for the 80-mg group (OR = 11.87; 95% CI, 2.25-62.62; $P = .004$) and 17.5% for the 60-mg group (OR = 5.85; 95% CI, 1.04-33.04; $P = .04$) vs 7.0% for placebo.

CONCLUSIONS AND RELEVANCE Extended-release mixed amphetamine salts in robust doses along with cognitive behavioral therapy are effective for treatment of co-occurring ADHD and cocaine use disorder, both improving ADHD symptoms and reducing cocaine use. The data suggest the importance of screening and treatment of ADHD in adults presenting with cocaine use disorder.

Extended-Release Mixed Amphetamine Salts vs Placebo for Comorbid Adult Attention-Deficit/Hyperactivity Disorder and Cocaine Use Disorder
A Randomized Clinical Trial

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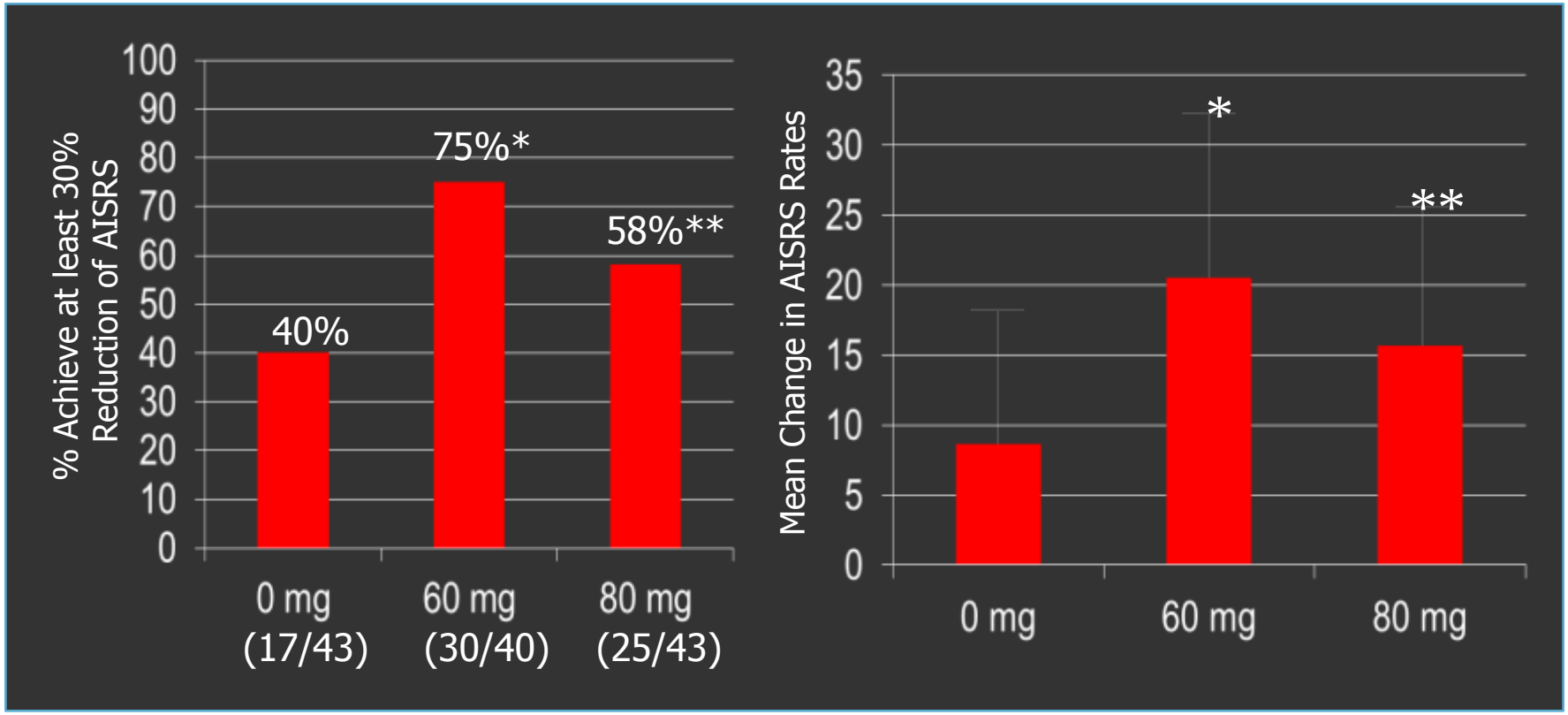
Primary ADHD Outcomes



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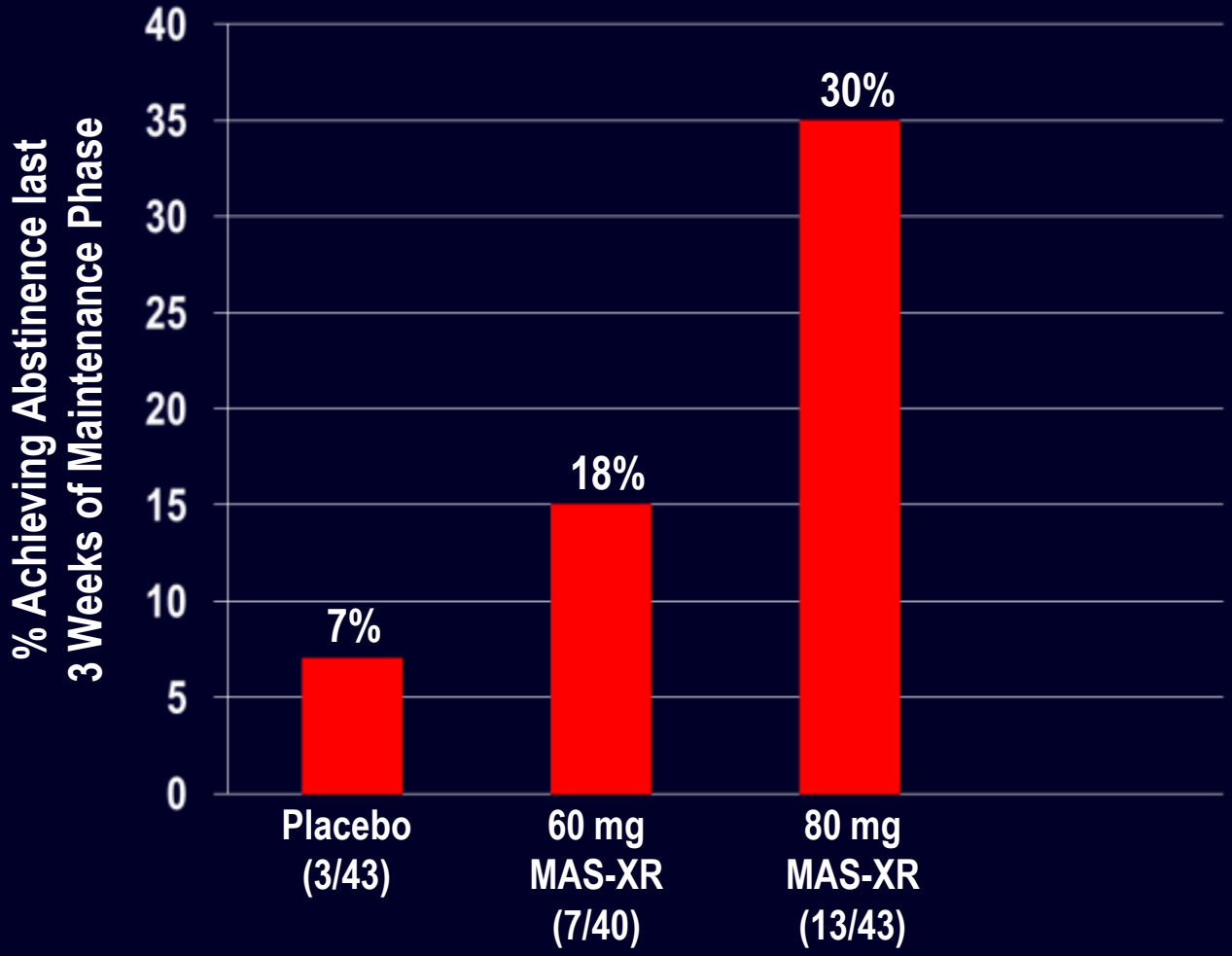

Mixed-Amphetamine Salts Increase Abstinence From Marijuana in Patients With Co-Occurring Attention-Deficit/Hyperactivity Disorder and Cocaine Dependence

The American Journal on Addictions, 25: 666–672, 2016

Daniel P. Notzon, MD,[1,2] John J. Mariani, MD,[1,2] Martina Pavlicova, PhD,[3] Andrew Glass, MA,[4] Amy L. Mahony, MA,[1] Daniel J. Brooks, MA,[1] John Grabowski, PhD,[5] Frances R. Levin, MD[1,2]

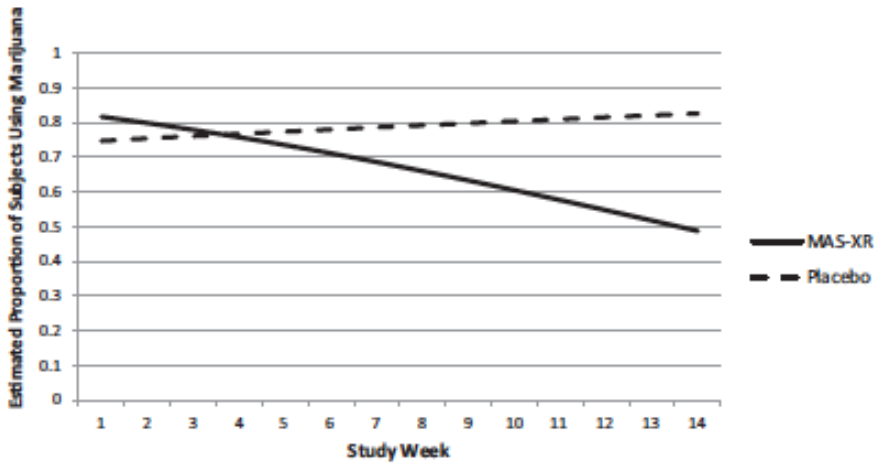

FIGURE 2. Estimated proportion of subjects using marijuana by study week.

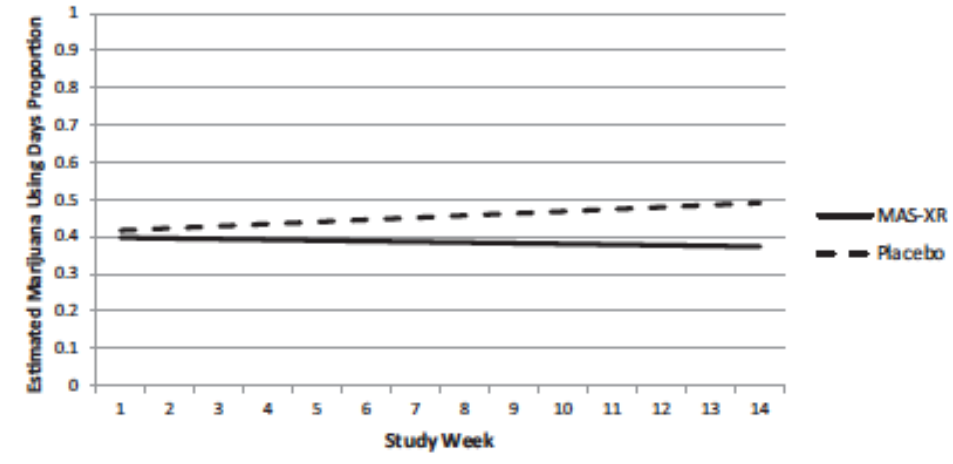

FIGURE 3. Estimated proportion of days using marijuana by study week.

Treatment of ADHD and comorbid cocaine use disorders with extended release mixed amphetamine salts is associated with increased abstinence from marijuana in those reporting baseline marijuana use.

Journal of Substance Abuse Treatment

Contents lists available at ScienceDirect

Long-Term Outcomes of Pharmacologically Treated Versus Non-Treated Adults with ADHD and Substance Use Disorder: A Naturalistic Study☆,☆☆

Berit Bihlar Muld, MSc [a,c], Jussi Jokinen, MD [b,f], Sven Bölte, Professor [c,d], Tatja Hirvikoski, Ph.D. [c,e,*]

Background and aims: The pharmacological treatment of individuals with attention deficit hyperactivity disorder (ADHD) and severe substance use disorder (SUD) is controversial, and few studies have examined the long-term psychosocial outcome of these treatments. Our aim was to investigate whether pharmacological treatment was associated with improved long-term psychosocial outcomes.

Methods: The present naturalistic study consisted of a long-term follow-up of 60 male patients with ADHD and comorbid severe SUD; all participants had received compulsory inpatient treatment due to severe substance abuse. The average interval between inpatient discharge and follow-up was 18.4 months. Thirty patients had received pharmacological treatment for ADHD, and 30 patients were pharmacologically untreated. The groups were compared with respect to mortality and psychosocial outcomes operationalized as substance abuse status, ongoing voluntary rehabilitation, current housing situation and employment status.

Results: The groups were comparable with regard to the demographic and background characteristics. Overall, mortality was high; 8.3% of the participants had deceased at follow-up (one in the pharmacologically treated group and four in the untreated group; the between-group difference was not significant). The group that received pharmacological treatment for ADHD exhibited fewer substance abuse relapses, received more frequently voluntary treatments in accordance with a rehabilitation plan, required less frequent compulsory care, were more frequently accommodated in supportive housing or a rehabilitation center, and displayed a higher employment rate than the non-treated group.

Conclusions: The recommendations for the close clinical monitoring of high-risk populations and the prevention of misuse and drug diversion were fulfilled in the structured environment of compulsory care for the treated group. Pharmacological treatment of ADHD in individuals with severe SUD may decrease the risk of relapse and increase these patients' ability to follow a non-pharmacological rehabilitation plan, thereby improving their long-term outcomes.

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Long-Term Outcomes of Pharmacologically Treated Versus Non-Treated Adults with ADHD and Substance Use Disorder: A Naturalistic Study☆,☆☆

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Follow-up results for the rehabilitation group and the non-rehabilitation group regarding mortality, substance abuse status, rehabilitation status, accommodation status and employment status.

	All	Pharmacologically treated $n = 30$	Untreated $n = 30$			
	$N = 60$			χ^2	p	Φ
Mortality						
Deceased at follow-up	5 (8.3%)	1 (3.3%)	4 (13.3%)	1.96	.16	−.18
Substance abuse status						
No known substance abuse at follow-up	32 (53.3%)	23 (76.7%)	9 (30.0%)	8.08	**.02**	.41
No substance abuse due to compulsory care	7 (11.7%)	1 (3.3%)	6 (20.0%)			
Ongoing substance abuse	9 (15.0%)	5 (16.7%)	4 (13.3%)			
Deceased at follow-up	5 (8.3%)	1 (3.3%)	4 (13.3%)			
Missing data	7 (11.7%)	0	7 (23.3%)			
Rehabilitation status						
No rehabilitation due to good psycho-social functioning	9 (15.0%)	6 (20.0%)	3 (10.0%)	13.22	**.01**	.47
Voluntary rehabilitation	13 (21.7%)	11 (36.7%)	2 (6.7%)			
Compulsory care	7 (11.7%)	1 (3.3%)	6 (20.0%)			
No rehabilitation due to other reasons	26 (43.3%)	11 (36.7%)	15 (50.0%)			
Deceased at follow-up	5 (8.3%)	1 (3.3%)	4 (13.3%)			
Accommodation status						
Own housing	17 (28.3%)	9 (30.0%)	8 (27.7%)	10.88	**.028**	.47
Rehabilitation center/family home	10 (16.7%)	8 (26.7%)	2 (6.7%)			
Supportive housing	11 (18.3%)	9 (30.0%)	2 (6.7%)			
Compulsory care	7 (11.7%)	1 (3.3%)	6 (20.0%)			
Homeless	5 (8.3%)	2 (6.7%)	3 (10.0%)			
Deceased at follow-up	5 (8.3%)	1 (3.3%)	4 (13.3%)			
Missing data	5 (8.3%)	0	5 (16.7%)			
Employment status						
Employed or studying	10 (16.7%)	6 (20.0%)	4 (13.3%)	12.55	**.028**	.49
No employment	14 (23.3%)	9 (30.0%)	5 (16.7%)			
In voluntary rehabilitation	13 (21.7%)	11 (36.7%)	2 (6.7%)			
In compulsory care	7 (11.7%)	1 (3.3%)	6 (20.0%)			
On sick-leave	3 (5.0%)	2 (6.7%)	1 (3.3%)			
Deceased at follow-up	5 (8.3%)	1(3.3%)	4 (13.3%)			
Missing data	8 (13.3%)	0	8 (27.7%)			

Note: The numbers of individuals with missing data and deceased individuals are shown for the psychosocial outcome measures; these data were excluded from the statistical analyses using pairwise exclusion. The p-values presented in bold indicate a statistically significant difference.

Final comments

- ADHD is a highly prevalent psychiatric disorder across the lifespan, associated with devastating complications and comorbidity.
- Stimulants are effective medication in patients with and ADHD and with or without a concurrent SUD.
- Whilst concerns over long-term risks for substance abuse following ADHD medication probably have been overstated, the decision to prescribe stimulant ADHD treatment should, as in all clinical practice, take into account individuals factors and potential adverse effects.
- Sustained-release or long acting stimulant medications can be safely effectively used in dually diagnosed ADHD patients.

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Thank you for your attention!

Questions?