ADHD and Substance Abuse: early signs

INCADDS Seminar – Friday 15th November 2013

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- Neurotech Solutions

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Prevalence of ADHD in SUD and vice versa

Waid, et al. 2004

In: Kranzler and Tinsley:

Dual Diagnosis and Psychiatric Treatment

*Approximately 33% of adults with ADHD have histories of *alcohol abuse* or dependence

*Approximately 20% of adults with ADHD have histories of *drug abuse* or dependence

*Treatment seeking alcoholics have childhood ADHD in 17-50%, and drug addicts in 17-45%

***Treatment seeking SUD patients have adult ADHD in approximately 20%**

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Contents lists available at SciVerse ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Review

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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29 studies (mainly USA) of treatment seeking SUD patients,
both adolescents and adults were included.
Thorough inclusion criteria on ADHD and SUD diagnoses
6689 cases, of which:
4054 adolescents
2635 adults

23,1% of cases do have ADHD

In adolescents: 25,3%

In adults: 23.3%

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What is ICASA ?

Working group of researchers and professionals, using their own expertise, their institute, their own network and their unite network for reaching the ICASA Foundation goals:

1. **Prevention of development of SUD in ADHD children, adolescents and adults.**
2. **Increasing the quality of diagnostic and treatment procedures in adolescents and adults suffering from both disorders.**

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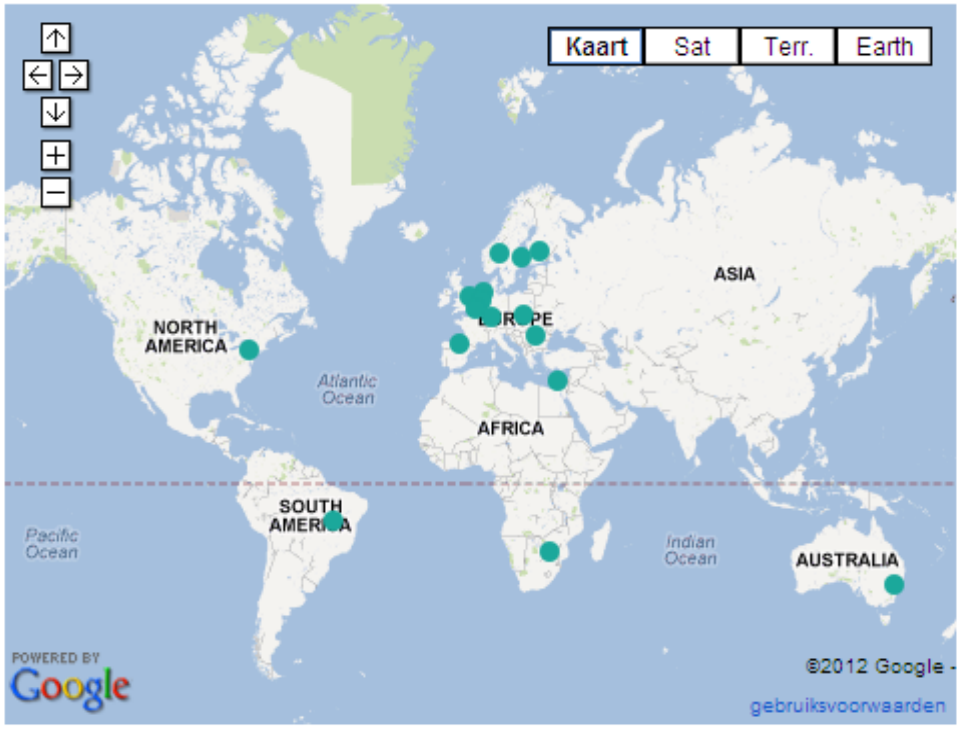
ICASA network



ICASA Network weergeven op een grotere kaart

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First priorities of the ICASA Foundation

Prevalence - proof that we have a problem also in other countries but the USA!

- proof for the size of the problem.
- prevalence in different groups

Patterns of comorbidity, severity of SUD in patients with and without ADHD

Practice: detection of ADHD subjects

Thus: The International ADHD in Substance use disorders Prevalence (IASP) study

International ADHD in Substance use disorders Prevalence Study (IASP)

Int. J. Methods Psychiatr. Res. 22(3): 232–244 (2013)
Published online 11 September 2013 in Wiley Online Library
(wileyonlinelibrary.com) **DOI:** 10.1002/mpr.1397

The International ADHD in Substance Use Disorders Prevalence (IASP) study: background, methods and study population

GEURT VAN DE GLIND,[1,3] KATELIJNE VAN EMMERIK-VAN OORTMERSSEN,[2,3] PIETER JAN CARPENTIER,[4] FRANCES R. LEVIN,[5] MAARTEN W.J. KOETER,[3] CSABA BARTA,[6] SHARLENE KAYE,[7] ARVID SKUTLE,[8] JOHAN FRANCK,[9] MAIJA KONSTENIUS,[9] ELI-TORILD BU,[8] FRANZ MOGGI,[10] GEERT DOM,[11] ZOLT DEMETROVICS,[6] MÉLINA FATSÉAS,[12] ARILD SCHILLINGER,[13] MÁTÉ KAPITÁNY-FÖVÉNY,[6] SOFIE VERSPREET,[11] ANDREA SEITZ,[14] BRIAN JOHNSON,[15] STEPHEN V. FARAONE,[15] J. ANTONI RAMOS-QUIROGA,[16] STEVE ALLSOP,[17] SUSAN CARRUTHERS,[17] ROBERT A. SCHOEVERS,[18] IASP RESEARCH GROUP[19] & WIM VAN DEN BRINK[3]

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IASP - design

Two stages:

Stage 1 - Screening phase:

Demographics

ASRS WHO screening instrument for adult ADHD 6 item version

Substance Use

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IASP design

Stage 2 - Full assessment phase"

Repeating ASRS

Mini-plus: SUD, ADHD, ASP, Depression,Bipolar

SCID-II: Borderline Personality Disorder

ADHD, golden standard: CAADID part I and II

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sample - iasp

Number of included patients
10 countries, 47 sites
N=3,575

ADHD Screening: ASRS | ADHD-diagnosis CAADID | Comorbid Disorders MINI+/SCID-II

Valid score ASRS T1 or T2
N=3,558

Valid score CAADID
N=1,276

Valid score ASRS T1 + ASRS T2 + CAADID
N=1,138

Valid score CAADID + MINI + SCID-II
N=1,205

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IASP – results

8 European countries: Norway, Sweden, the Netherlands, Belgium, France, Spain, Switzerland, Hungary /Australia, USA

3558 subjects (stage 1)

Australia, Belgium, USA: only stage 1: 953

Drop out in the other 7 countries: 1329

So remained: **1276** fully assessed (stage 2)
Norway, Sweden, the Netherlands, France, Spain, Switzerland, Hungary

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Stage 2 sample biased?

The stage 2 sample was slightly but significantly older compared to the drop outs;

The level of ASRS screen positives; The sample significantly differed from the drop out sample: 40% screen positives in the sample vs. 37.3% in the drop out subjects. So we weighted the results according to these different sampling fractions

For other demographic variables (gender, substance of abuse, employment, housing) there were no significant differences.

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Variability in Prevalence of adult ADHD in treatment seeking SUD patients

Drug and Alcohol Dependence

Available online 5 October 2013

In Press, Accepted Manuscript — Note to users

Variability in the prevalence of adult ADHD in treatment seeking substance use disorder patients: Results from an international multi-center study exploring DSM-IV and DSM-5 criteria

Geurt van de Glind[a, b, 1], Maija Konstenius[c, 1], Maarten W.J. Koeter[b], Katelijne van Emmerik-van Oortmerssen[b, e, q], Pieter-Jan Carpentier[f], Sharlene Kaye[g], Louisa Degenhardt[g, u], Arvid Skutle[h], Johan Franck[c], Eli-Torild Bu[h], Franz Moggi[i], Geert Dom[j], Sofie Verspreet[j], Zsolt Demetrovics[k], Máté Kapitány-Fövény[k, v], Melina Fatséas[l], Marc Auriacombe[l], Arild Schillinger[m], Merete Møller[m], Brian Johnson[n], Stephen V. Faraone[o], J Antoni Ramos-Quiroga[o], Miguel Casas[o], Steve Allsop[p], Susan Carruthers[p], Robert A. Schoevers[q], Sara Wallhed[r], Csaba Barta[s], Peter Alleman[t], I.A.S.P. Research group[w], Frances R. Levin[d], Wim van den Brink[b]

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Prevalence of ADHD in SUD treatment seeking subjects – DSM-IV

general population: childhood ADHD 4 - 7 %
adult ADHD 2.5%

Kessler et al., 2007, Simon et al., 2009

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Prevalence of ADHD in SUD treatment seeking subjects – IASP study

	Fr 157	Hu 226	Neth 129	Norw 220	Spain 222	Swed 168	Switz 154	Range 1276
DSM-IV Child	21.3 (14.9-27.7)	12.9 (8.6-17.3)	15.0 (8.9-21.2)	41.0 (34.5-47.5)	10.6 (6.5-14.6)	27.7 (20.9-34.5)	15.1 (9.4-20.8)	**10.6-41.0**
DSM-IV Adult	11.2 (6.3-16.2)	5.4 (2.4-8.3)	10.1 (4.9-15.3)	31.3 (25.2-37.5)	9.2 (5.4-13.0)	19.7 (13.7-25.7)	6.1 (2.3-9.9)	**5.4-31.3**
DSM-IV NOS	16.9 (11.0-22.7)	8.9 (5.2-12.7)	12.3 (6.7-18.0)	34.5 (28.2-40.7)	10.6 (6.6-14.7)	22.4 (16.1-28.7)	8.2 (3.9-12.5)	**8.2-34.5**
DSM-5 Adult	16.2 (10.5-22.0)	7.6 (4.1-11.1)	11.8 (6.2-17.3)	32.6 (26.4-38.8)	10.6 (6.6-14.7)	22.4 (16.1-28.7)	7.7 (3.5-12.0)	**7.6-32.6**

Prevalence: substance

	Sweden-Norway	Other countries
Outpatient Alcohol	13-14%	4-10% (Spain, France, Netherlands)
Outpatient Drugs	37-41%	12-30% (Spain, France, Netherlands)
Inpatient Alcohol	22% (Norway)	5% (Hungary and Switzerland)
Inpatient Drugs	57% (Norway)	5% (Hungary)

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Validity of the ASRS in a SUD population

Drug and Alcohol Dependence 132 (2013) 587–596

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Validity of the Adult ADHD Self-Report Scale (ASRS) as a screener for adult ADHD in treatment seeking substance use disorder patients

Geurt van de Glind[a,b,*], Wim van den Brink[b], Maarten W.J. Koeter[b], Pieter-Jan Carpentier[c], Katelijne van Emmerik-van Oortmerssen[b,d], Sharlene Kaye[e], Arvid Skutle[f], Eli-Torild H. Bu[f], Johan Franck[g], Maija Konstenius[g], Franz Moggi[h], Geert Dom[i], Sofie Verspreet[i], Zsolt Demetrovics[j], Máté Kapitány-Fövény[j,u], Melina Fatséas[k], Marc Auriacombe[k], Arild Schillinger[l], Andrea Seitz[m], Brian Johnson[n,o], Stephen V. Faraone[n,o], J. Antoni Ramos-Quiroga[p], Miguel Casas[p], Steve Allsop[q], Susan Carruthers[q], Csaba Barta[r], Robert A. Schoevers[s], Frances R. Levin[t], IASP Research Group[1]

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Validity of the ASRS in a SUD population

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?					

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Validity of the ASRS in a SUD population

	Adult ADHD according to CAADID
	ASRS at T1 (4/6)
Sensitivity (95% CI)	.84 (.76-.88)
Specificity (95% CI)	.66 (.63-.69)

ASRS has a good sensitivity, but limited specificity.

No difference between ASRS at intake or after two weeks

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Comorbidity patterns in SUD patients with and without ADHD

> Addiction > Accepted Articles > Abstract

Addiction

Research Report

Psychiatric comorbidity in treatment seeking substance use disorder patients with and without ADHD; results of the IASP study

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Issue

Addiction

Accepted Article (Accepted, unedited articles published online and citable. The final edited and typeset version of record will appear in future.)

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Comorbidity patterns in SUD patients with and without ADHD

	In patients without ADHD (%)	In patients with ADHD (%)	OR (95% CI) p<.001
Current depression (Alcohol)	15.3	39.7	**4.1 (2.1-7.8)**
Current (hypo) mania	4.1	14.9	**4.3 (2.1-8.7)**
Antisocial Personality Disorder	17.0	51.8	**2.8 (1.8-4.2)**
Borderline (Alcohol)	8.2	34.5	**7.0 (3.1-15.6)**
Borderline (Drugs)	16.7	29.0	**3.4 (1.8-6.4)**

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	0 Comorbid Disorders N (%)	1 Comorbid Disorder N (%)	2 Comorbid Disorders N (%)	3 Comorbid disorders N (%)	4 Comorbid disorders N (%)
SUD patients without ADHD (N=1037)	653 **(63.0)**	272 (26.2)	82 (7.9)	26 (2.5)	4 (0.4)
SUD patients with ADHD (N=168)	42 **(25.0)**	68 (40.5)	39 (23.2)	10 (6.0)	9 (5.4)

Post hoc analysis for at least 1 comorbid disorder: χ^2 (1) = 85.4; p < .001. **OR=5.1** (95% CI 3.5–7.4)

Post hoc analysis for at least 2 comorbid disorders: χ^2 (1) = 67.1; p < .001. **OR=4.4** (95% CI 3.0–6.3)

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Conclusions – IASP study so far

- ADHD is highly prevalent in SUD treatment seeking patients: 7.6-32.6% adult (DSM-5) and 10.6-41.0% childhood ADHD (DSM-IV)

- ADHD is more prevalent in DUD than in AUD

- The ASRS can be used for detection of possible ADHD cases in SUD treatment seeking patients, but needs improvement in specificity

- SUD patients with ADHD have much more comorbid disorders: they nelong to the group of more severe cases in addiction treatment centers.

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Future IASP analyses

Clinical characteristics of treatment seeking substance use disorder patients with and without adult DSM-5 ADHD: the role of antisocial personality disorder

Risk factors, education and ADHD history - Early signs

Trauma in treatment seeking SUD patients with and without ADHD

Validity of the MINI-plus ADHD module in treatment seeking SUD patients

Persistence of ADHD symptoms into adulthood

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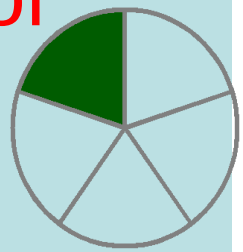
Figures in perspective…

Approximately 1/5th of SUD-treatment seeking patients do have childhood ADHD; 2/3rd of these have current adult ADHD



In the Netherlands: 17 million inhabitants

50.000 SUD patients at outpatient addiction treatment centers per year

More than 10% - over 5.000 of these do have current adult ADHD (DSM-5)

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ADHD and SUD

IASP concentrates on SUD treatment seeking patients

How about other populations where we might find patients with both disorders:

- Mental Health Care
- Child & Adolescent Psychiatry
- Adolescent Substance Abuse Care
- Prisons
- General population

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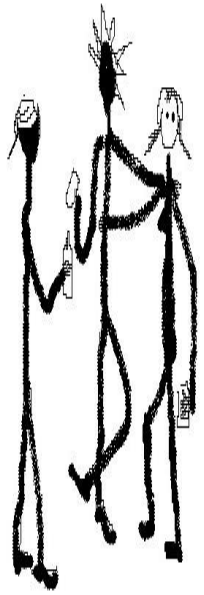
Early Signs – introduction

Slides from Arvid Skutle - Norway

Persons with SUD often have been exposed to a number of negative developmental, educational and stress factors in childhood and adolescence.

ADHD on top of this is a challenge for both the patients and their treatment. More knowledge about ADHD as a risk factor in relation to the development of drug addiction is required.



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Early Signs - Background

ADHD symptoms begin in early childhood and can last a lifetime. In some cases, the impulse control is improved in adulthood, and some manage to live with their disorder in a more functional way.

Still, ADHD is a lifelong challenge for many of them, especially if untreated. Early intervention for ADHD in the school and the health systems may help prevent the development of SUD or limit the consequences related to it

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The present study questions

two groups of SUD patients: SUD with and without ADHD,

were compared on a number of background risk factors,

representing the additional loads that ADHD can make, such as:

- basic developmental skill problems in early childhood: walking and talking, toilet training, and difficulties
- controlling temper and behavior

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The present study questions

Did the ADHD + group have more school-related difficulties, including more general learning difficulties, underachievement, more extra help, and more drop out from school?

Environmental and medical trauma:

- To what extent has the ADHD group suffered neglect, abuse, violence/ trauma and other stressors during childhood compared with SUD patients without ADHD?
- To what extent has the ADHD group experienced medical diseases and trauma during childhood compared with SUD patients without ADHD?

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The present study questions

Most of the risk factors and behaviors in focus here are very visible, in the families, in the schools, in the health services and the leisure activities.

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Instruments

CAADID (Conners Adult ADHD Diagnostic Interview for DSM-IV): anamnestic and diagnostic part (Epstein, Johnson, and Conners, 2001)

deals with the important risk factors in childhood and adolescence, and provides a very useful clinical background picture

is primarily a diagnostic instrument, but also provides valuable information about complications in the "border zone" around ADHD.

CAADID has been shown to have good psychometric properties (Epstein & Kollin, 2006). It is made as a structured interview and consists of two parts.

AD / HD screening: ASRS v1.1 (Adult Self-Report Scale), self-report scale for adults

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Instruments

Drug use:

MINI + (alcohol abuse and dependence, drug abuse and addiction)

Psychiatric assessments:

SCID II (borderline pf) and MINI + (severe depressive episode, dysthymia, suicidality, manic episode, antisocial pf, AD / HD - children / youth / adult)

ADHD diagnosis:

The diagnosis of ADHD for adults at the fulfillment of the criteria from the DSM-IV-TR. The assessment carried out according to standard procedure. In this paper DSM-V criteria are applied: adhd adulthood adjusted criteria 1 #symptoms 5 and 2 age of onset less or equal to 11

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Sample

Sweden	165	13,7
Norway	175	14,5
Netherlands	125	10,4
Swiss	152	12,6
France	154	12,8
Spain	220	18,3
Hungary	214	17,8
Total	1205	100,0

27 % females, mean age 40 years

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Primary substance

	Frequency	Percent
ALCOHOL	665	55,2
AMPHETAMIN	76	6,3
CANABIS	128	10,6
COCAINE	104	8,6
HEROINE	115	9,5
MEDICATION / PILLS	51	4,2
METHADONE	11	,9
OTHER	39	3,2

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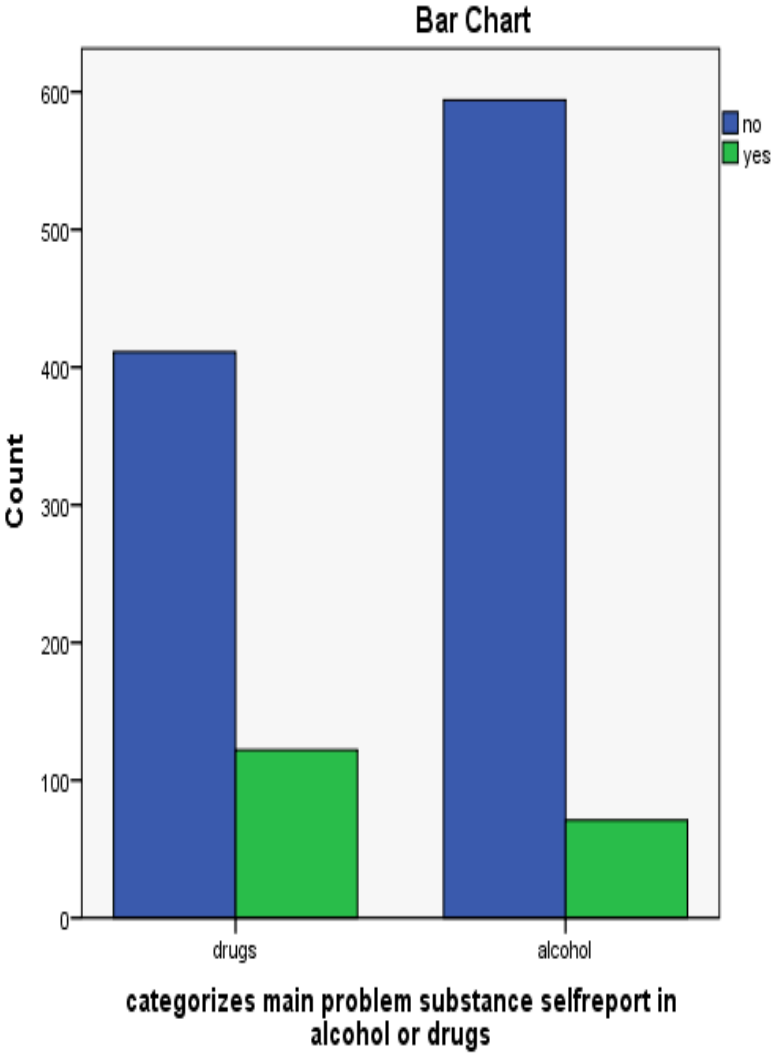
ADHD yes/no vs. main substance alcohol/drugs



alcohol ADHD+ : 11%

drugs ADHD+ : 23%

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		Sum of Squares	df	Mean Square	F	Sig.
ENVIRONMENTAL	Between Groups	263,224	1	263,224	47,500	,000
	Within Groups	6350,605	1146	5,542		
	Total	6613,828	1147			
DEVELOPMENTAL	Between Groups	16,812	1	16,812	38,247	,000
	Within Groups	501,083	1140	,440		
	Total	517,895	1141			
MEDICAL HISTORY	Between Groups	270,339	1	270,339	101,270	,000
	Within Groups	3040,562	1139	2,670		
	Total	3310,901	1140			
TEMPERAMENTAL	Between Groups	1501,528	1	1501,528	221,429	,000
	Within Groups	7716,879	1138	6,781		
	Total	9218,407	1139			
ELEMENTORY SCHOOL	Between Groups	1319,833	1	1319,833	168,405	,000
	Within Groups	8989,306	1147	7,837		
	Total	10309,138	1148			
MIDDLE / HIGH SCHOOL	Between Groups	1079,464	1	1079,464	143,746	,000
	Within Groups	7990,143	1064	7,510		

RISK FACTORS		N	MEAN	SD
Developmental risk (0-4)	ADHD+	181	0,6	0,6
	ADHD-	961	0,3	0,9
Temperamental risk (0-13)	ADHD+	182	5,6	2,5
	ADHD-	958	2,5	2,9
Elementory school risk (0-15)	ADHD+	184	5,3	2,7
	ADHD-	965	2,4	3,1
Middle/high school risk (0-16)	ADHD+	168	5,7	2,4
	ADHD-	898	2,9	2,8
Environmental risk (0-10)	ADHD+	184	3,8	2,3
	ADHD-	964	2,4	2,6
Medical history risk (0-11)	ADHD+	182	2,9	1,9
	ADHD-	959	1,6	1,6

Results

Does it matter? DSM-IV or DSM-V:

Same main results

Did main drug/substance have an (covariate) effect?

Yes, on temper – more stimulants and cannabis

and on education/school – more stimulants and cannabis

Was gender important?

Yes, boys higher on elementory school risk factor, in both the ADHD+ and ADHD- groups

and girls higher on environmental risk factors in both groups

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Results

The ADHD group

- had significantly slower infant development
- had greater problems with controlling temper
- had a more poor educational history
- experienced more family and environmental trauma
- were more accident prone

Despite these obvious behavioral problems during childhood and adolescence, only a few were identified and treated for their ADHD.

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Conclusion

Relatively few of the comorbid group SUD & ADHD have been identified during childhood and adolescense for their ADHD

There are a number of early and visible behavioral signs that should be detected earlier

More adequate and early treatment of the ADHD might contribute

- to the prevention of SUD carreer
- to a less severe SUD problem
- to make the SUD more available for treatment
- to increase the chances of help-seeking for the SUD
- reduce no-shows and drop-outs in treatment

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Statement of Potential Conflicts of Interest

Treatment of ADHD and SUDS: A Review

Relating to this presentation, there are no relationships that could be perceived as potential conflict of interests

Frances R. Levin, MD
Columbia University/College of Physicians and Surgeons/NYSPI

Treatment of ADHD and SUD

- There is a growing literature, particularly in past several years
- Not surprisingly, much more data available for adult ADHD without substance abuse
- Options includes: pharmacotherapy, psychotherapy, multimodal treatment
- Most studies have been pharmacologic

Nonpharmacologic Approaches for ADHD and/or Inattention

- Cognitive Behavioral Therapy
- Cognitive remediation strategies
- Mindfulness Approaches
- Sensory integration
- Coaching intervention
- Nodal-link mapping
- Psychoeducation
- Mutual Help groups
- Exercise

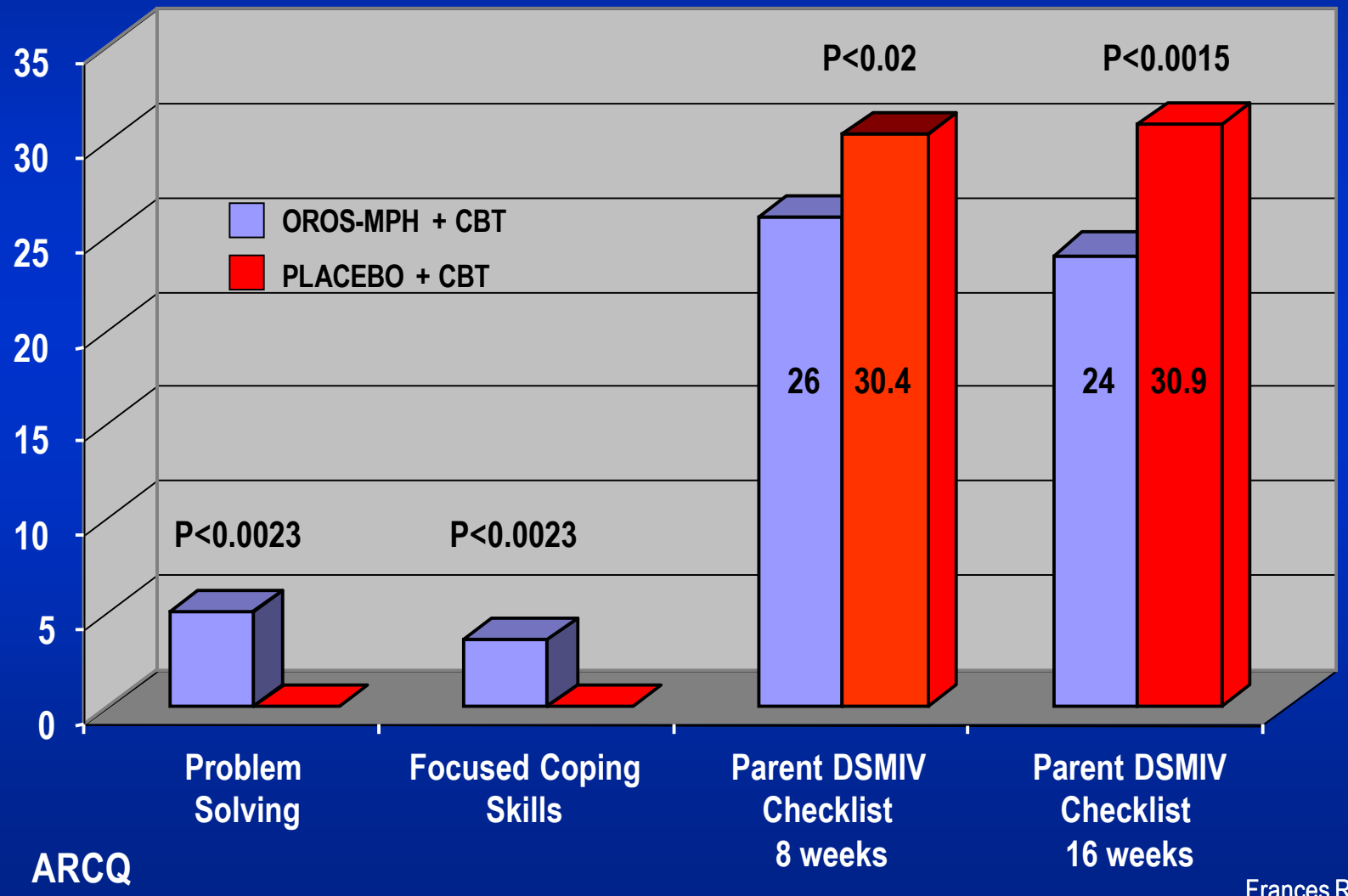
Randomized controlled trial of osmotic-release methylphenidate with cognitive-behavioral therapy in adolescents with ADHD and substance use disorders

(Riggs et al., 2011; *J Am Acad Child Adolesc Psychiatry*)

- **Largest study to date:**
  - 303 adolescent substance abusers (mostly cannabis use disorders). Titrated to 72mg/day
  - Well-tolerated, compliance high, exceptionally well-executed
  - Both treatment arms show significant improvement
  - No significant difference between groups on primary ADHD (self-report ADHD ratings) or substance use outcome measures (self-reported substance use). Although positive on some secondary ADHD outcome measures

Secondary ADHD Outcome Measures

(Riggs et al., 2011)



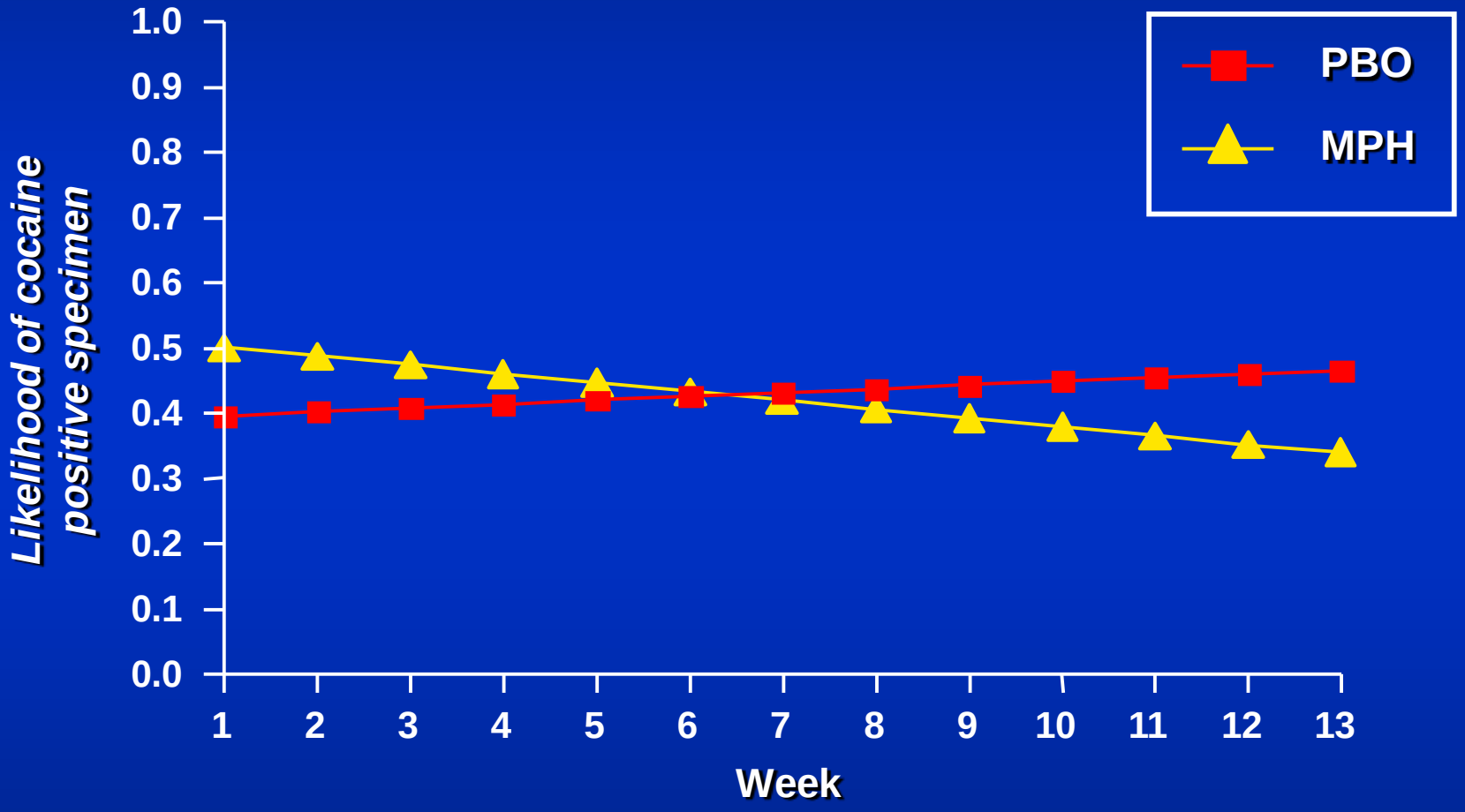
Frances R. Levin, MD

Treatment of cocaine-dependent treatment seekers with adult ADHD: double-blind comparison of methylphenidate and placebo

(Levin et al., 2007; *Drug Alcohol Depend*)

- **106 Cocaine-Dependent Adults with ADHD**
- **Individuals randomized to Methylphenidate-SR (40 mg BID), and placebo**
- **No group differences in ADHD symptoms based on:**
  - ADHD Rating Scale, CGI
  - Trend for greater improvement WRAADDS over time on methylphenidate
- **No difference in cocaine use on overall proportion of cocaine positive urines**

Predicted Probability of Cocaine Positive Sample Per Week



Significant difference in the slopes for the MPH and PBO groups over time (Z=3.27,p=.001).

Levin et al., 2007

Sustained release methylphenidate (OROS-MPH) for the treatment of ADHD in amphetamine abusers

(Kostenius et al., 2010, *Drug Alcohol Depend*)

- 24 abstinent adults with ADHD
- Fixed dose of 72 mg/day
- 12 week trial included skills training
- 93%, completed the trial
- Significant reduction in self-reported ADHD scores but did not differ between groups.
- Drug use, measured by self-reports or urine toxicology were not different between groups.

Sustained release methylphenidate (OROS-MPH) for ADHD criminal offenders with amphetamine dependence

(Kostenius et al., 2013, Addiction)

- 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
- Greater improvement in ADHD symptoms for those on MPH
- Greater proportion of negative urines for those receiving MPH

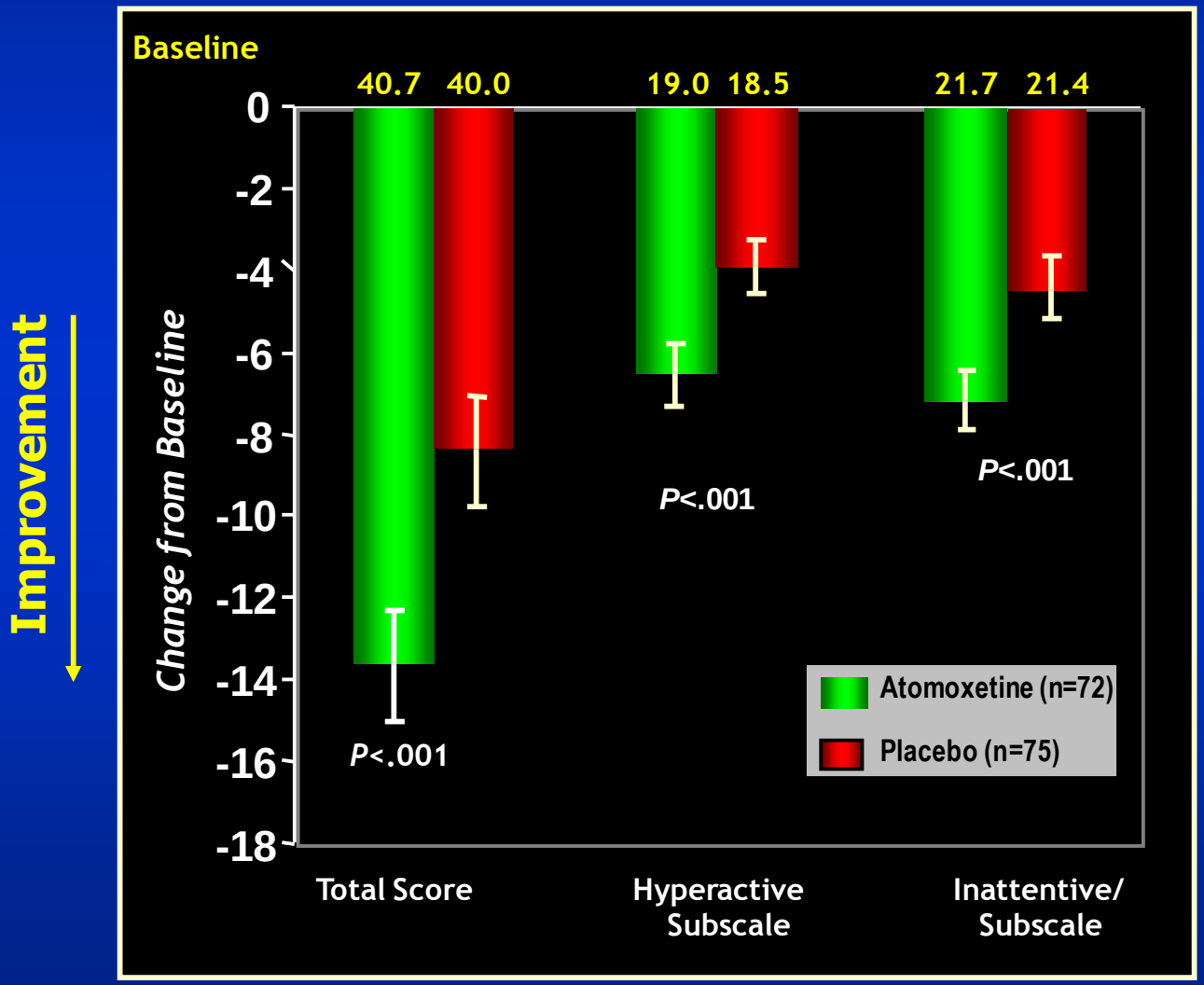
Placebo-controlled trial of atomoxetine in marijuana-dependent individuals with ADHD

(McRae-Clark et al., 2010; *Am J Addiction*)

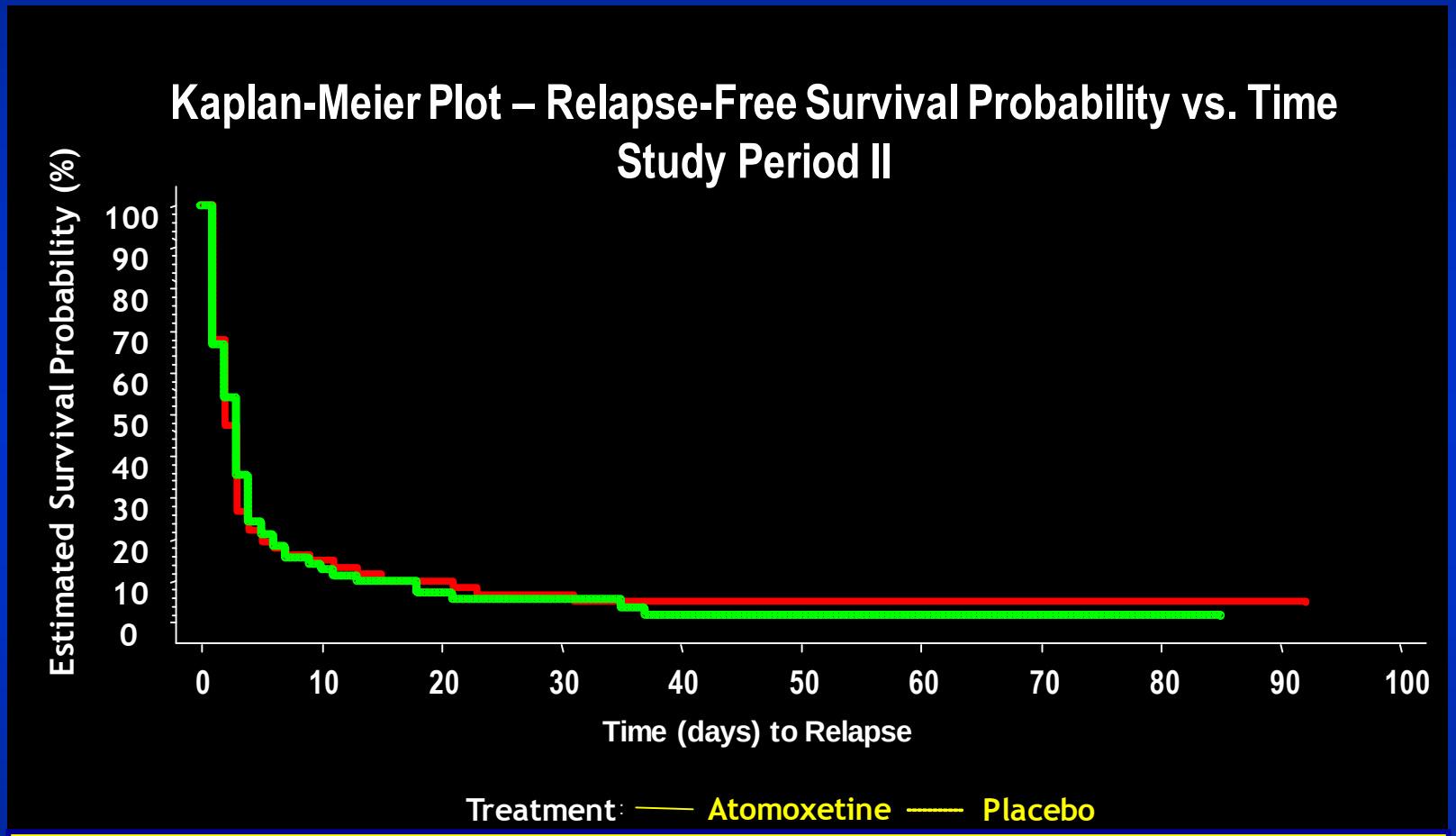
- 38 adult marijuana abusers with ADHD
- Doses up to 100 mg
- 12 week trial included motivational interviewing
- Sixteen participants, 42%, completed the trial
- Atomoxetine had greater improvement than placebo based on CGI-I (-1.22 vs. -0.89) but on ADHD self-report measure, no significant differences.
- No difference in marijuana use outcomes

Atomoxetine in 147 Adults with ADHD and Recently Abstinent Alcohol Use Disorders: ADHD

(Wilens et al., 2008, *Drug Alcohol Depend*)



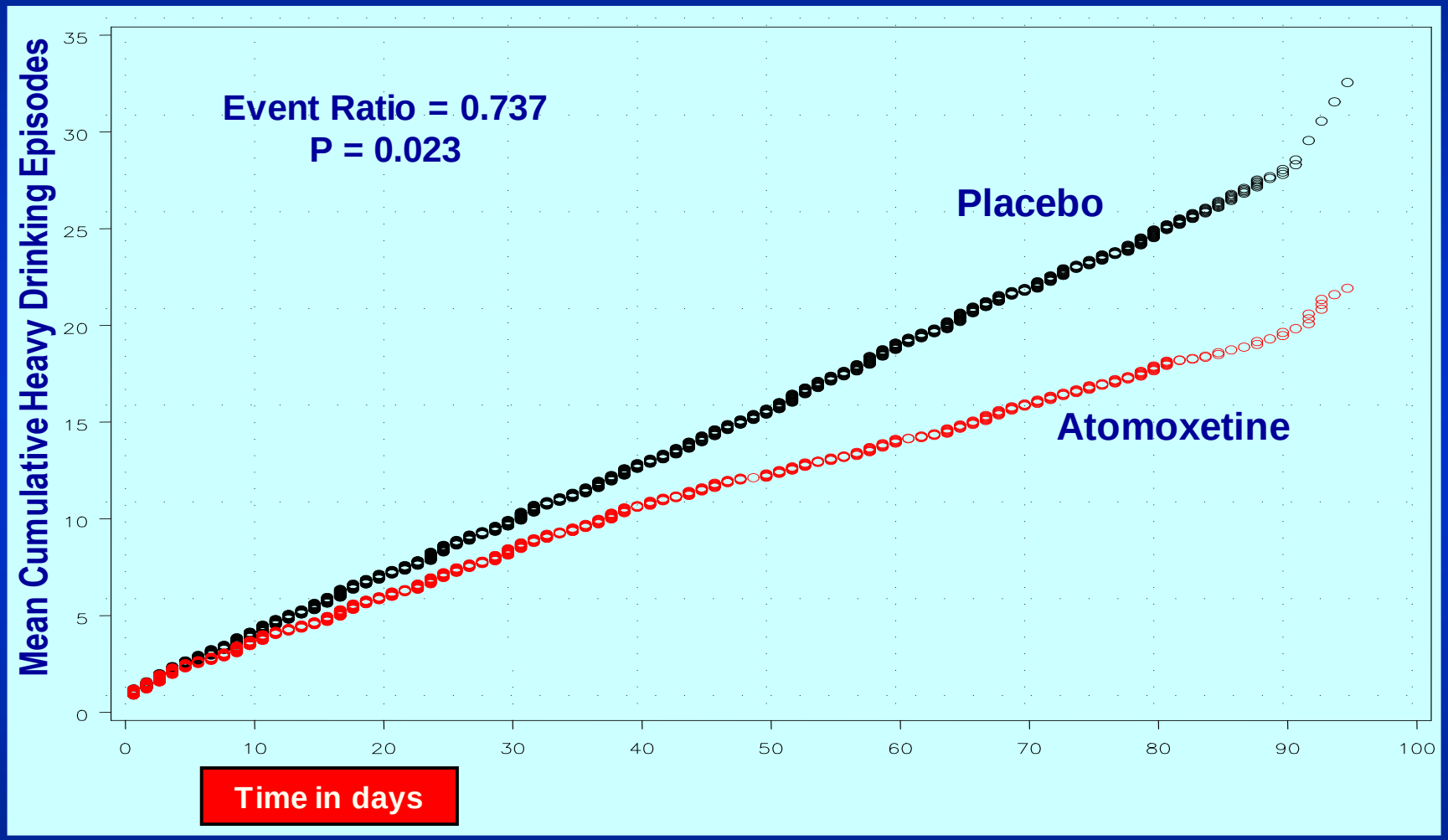
Atomoxetine vs. Placebo in Recently Abstinent Adults with Alcohol Use Disorders: Primary Outcome-Time to Relapse of Alcohol Abuse



Note that, using the definition of relapse specified in the protocol, almost 90% of subjects had relapsed within 2 weeks.

Wilens et al., 2008; *Drug Alcohol Depend*

Atomoxetine vs. Placebo in Recently Abstinent Adults with Alcohol Use Disorder and ADHD: Multiple Event Cox Model



An event ratio of 0.737 indicates that, relative to patients treated with placebo, atomoxetine-treated patients experienced an approximately 26.3% greater reduction in the rate of heavy drinking. Separation occurred at Day 55

Wilens, et al. 2008

Ten Double-Blind Outpatient Studies Using Stimulants/Atomoxetine to Treat Substance Abusers with ADHD: Conclusions

- 11 outpatient double-blind trials, 8 conducted in adults
- Most of the studies have some "signal" in terms of reducing ADHD (8/11 studies) and about half suggest some benefit in terms of substance use, particularly if there is an ADHD response (5/11).
- For 7 of the trials that used MPH, 1 trial used immediate release, 2 trials used slow-release older preparation and 4 trials used OROS-MPH 72 mg.
- None of trials reported diversion or misuse.

Why do substance abusers not respond as well to stimulant treatment ?

- Secondary outcomes do show some benefit. Should we look at the results as the glass being "half-full" rather than "half-empty"
- Maybe differences most noticeable if randomize after a period of abstinence and ensure persistence of severe symptomatology.
- Cognitive behavioral treatment may be an effective treatment "Placebo" group is not equal to no treatment"

Story Continues

- **Ongoing Multi-site Trial** (Levin, Grabowski)
  - Two doses of Adderall-XR® (Extended Release- Mixed Amphetamine Salts) compared to placebo for cocaine-dependent adults with ADHD
  - Over 120 randomized, just ended enrollment
- **Of note, none of the published studies in adult substance abusers with ADHD, to date, have used amphetamines**
- **Concern that greater abuse liability with amphetamine formulations. Not clear that long-acting AMPH preparations have greater abuse liability than long-acting MPH** (Bright 2008)
- **Recent meta-analysis** (Faraone and Buitelaar, 2009) **suggest that amphetamines more effective than methylphenidate in treating child and adolescent ADHD**

Not only medication!

van Emmerik–van Oortmerssen *et al. BMC Psychiatry* 2013, **13**:132
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BMC Psychiatry

STUDY PROTOCOL **Open Access**

Investigating the efficacy of integrated cognitive behavioral therapy for adult treatment seeking substance use disorder patients with comorbid ADHD: study protocol of a randomized controlled trial

Katelijne van Emmerik–van Oortmerssen[1,2,3,4*], Ellen Vedel[1,2], Maarten W Koeter[3], Kim de Bruijn[1,2], Jack J M Dekker[1], Wim van den Brink[3] and Robert A Schoevers[4]

Abstract

Background: Attention deficit hyperactivity disorder (ADHD) frequently co-occurs with substance use disorders (SUD). The combination of ADHD and SUD is associated with a negative prognosis of both SUD and ADHD. Pharmacological treatments of comorbid ADHD in adult patients with SUD have not been very successful. Recent studies show positive effects of cognitive behavioral therapy (CBT) in ADHD patients without SUD, but CBT has not been studied in ADHD patients with comorbid SUD.

Methods/design: This paper presents the protocol of a randomized controlled trial to test the efficacy of an integrated CBT protocol aimed at reducing SUD as well as ADHD symptoms in SUD patients with a comorbid diagnosis of ADHD. The experimental group receives 15 CBT sessions directed at symptom reduction of SUD as well as ADHD. The control group receives treatment as usual, i.e. 10 CBT sessions directed at symptom reduction of SUD only. The primary outcome is the level of self-reported ADHD symptoms. Secondary outcomes include measures of substance use, depression and anxiety, quality of life, health care consumption and neuropsychological functions.

Discussion: This is the first randomized controlled trial to test the efficacy of an integrated CBT protocol for adult SUD patients with a comorbid diagnosis of ADHD. The rationale for the trial, the design, and the strengths and limitations of the study are discussed.

Trial registration: This trial is registered in www.clinicaltrials.gov as NCT01431235.

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Overall conclusions

- Clear linkage between ADHD and SUD
- ADHD subjects in treatment seeking SUD patients very often belong to the group of more complex SUD patients
- In early life visible signs/behavior do occur and should be targeted in order to prevent SUD development in ADHD children/adolescents
- Casefinding of ADHD subjects in treatment seeking SUD patients is possible, but needs improvement
- Results of treatment: various "negative results", however: in secondary outcome measures there are positive results

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So: innovative research is warranted!!!

For reaching the two ICASA Foundation goals:

- **Improvement of diagnostic and treatment procedures for patients suffering from both ADHD and SUD**

- **Prevention of development of Substance Use Disorders in children/adolescents/adults with ADHD**

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www.adhdandsubstanceabuse.org

THANK YOU VERY MUCH FOR YOUR ATTENTION!!

Geurt van de Glind

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