Exercise as antidepressant treatment

Progress, challenges and prospects

Panteleimon Ekkekakis, Ph.D., FACSM

IOWA STATE UNIVERSITY

Evidence-Based Practice Pathway

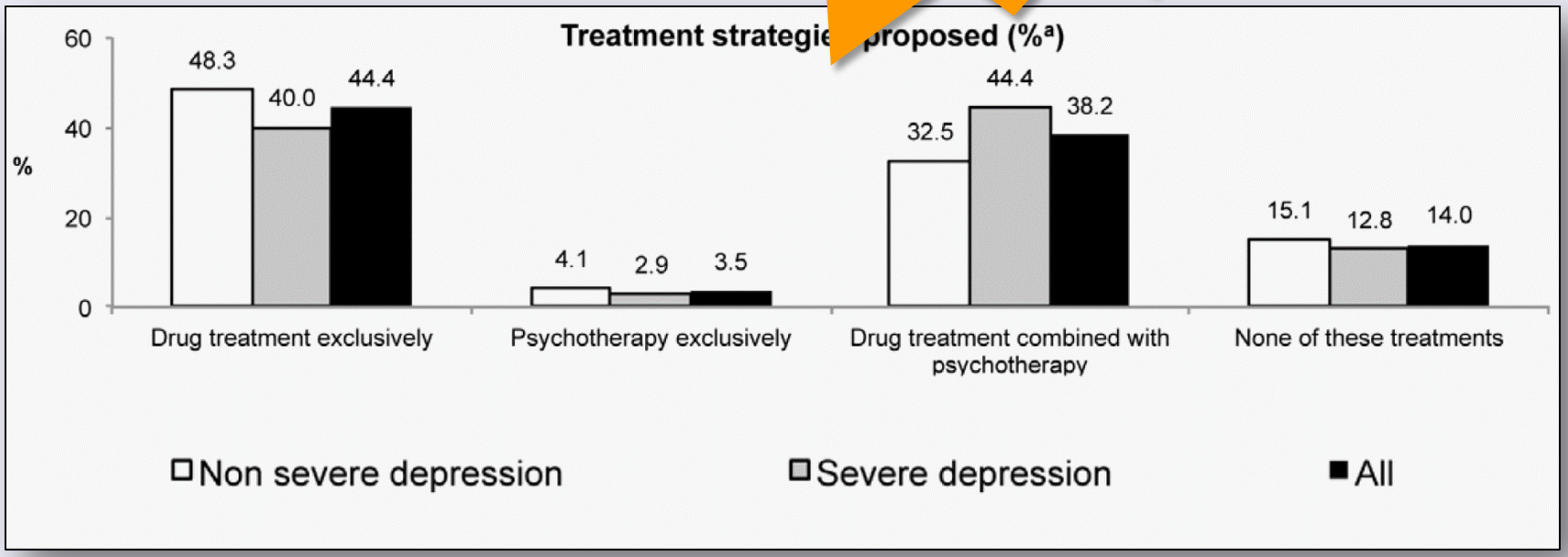
Convincing evidence of efficacy and effectiveness

PLOS ONE 2012 | Volume 7 | Issue 12 | e52429

General Practitioners' Choices and Their Determinants When Starting Treatment for Major Depression: A Cross Sectional, Randomized Case-Vignette S...rvey

Hélène Dumesnil[1,2,3], Sébastien Cortaredona[1,2,3], Hélène ...[4,5]
Alain Paraponaris[1,2,3], Pierre Verger[1,2,3]*

Antidepressants prescribed in 80.8% of cases of mild & moderate depression



Journal of Affective Disorders 147 (2013) 94–100

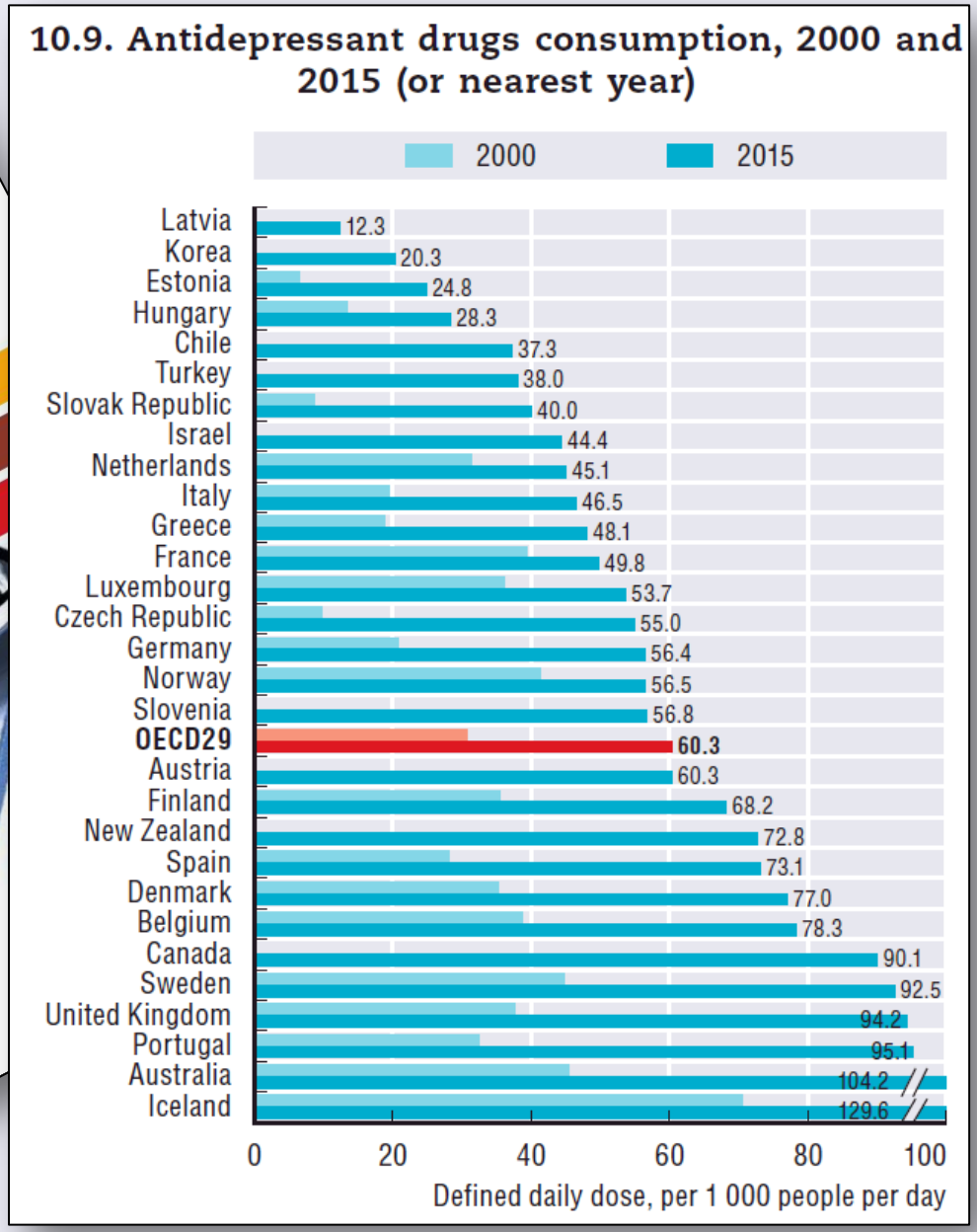
Treatment preferences in patients with first episode depression

Janie Houle [a,*], Benjamin Villaggi [a], Marie-Dominique Beaulieu [b], François Lespérance [c], Gilles Rondeau [d], Jean Lambert [e]

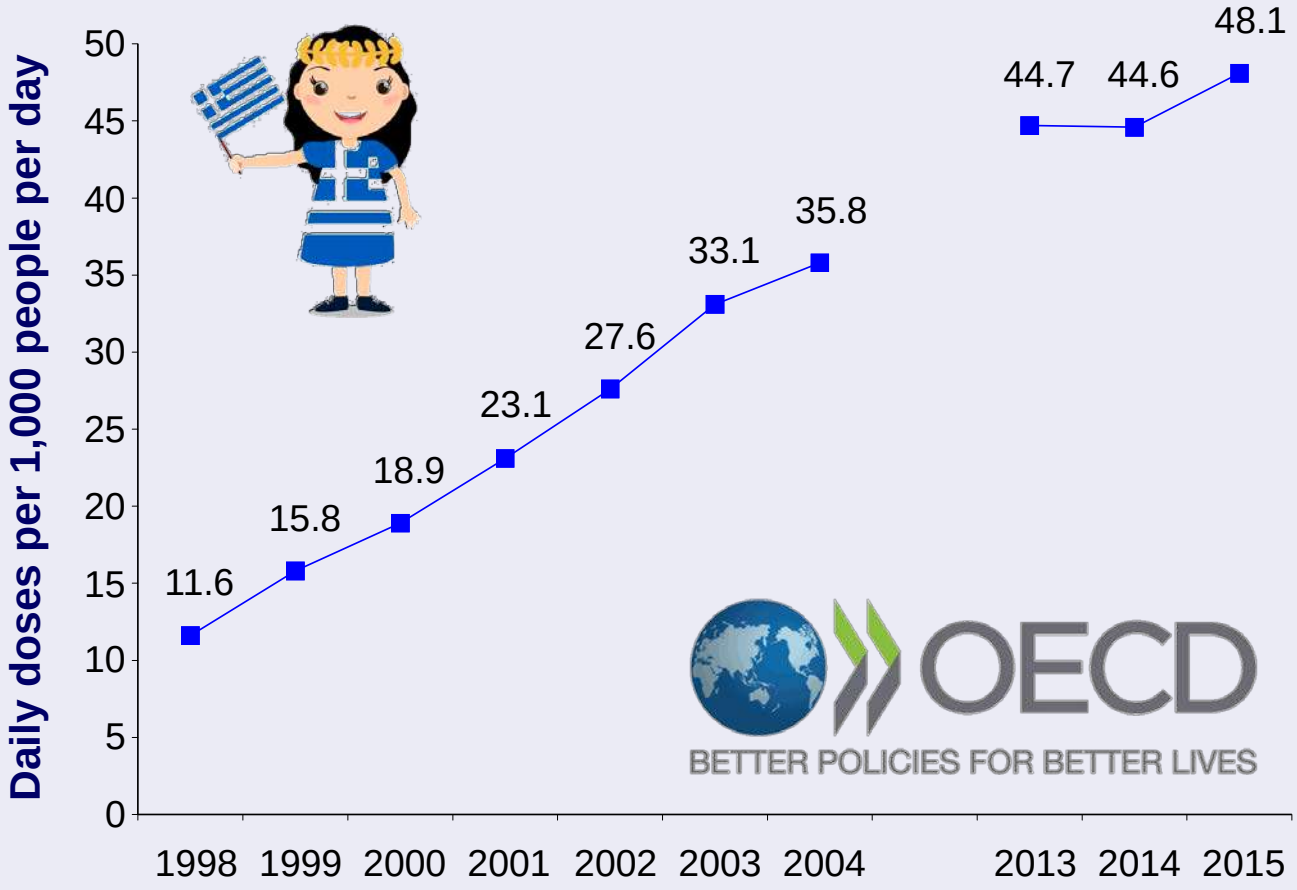
Antidepressants prescribed to 91% of newly diagnosed patients with first-episode depression

Characteristics	*n* (%)
Current treatment	
Antidepressants only	50 (56.8)
Psychotherapy only	2 (2.3)
Both treatments	30 (34.1)
None	6 (6.8)

10.9. Antidepressant drugs consumption, 2000 and 2015 (or nearest year)



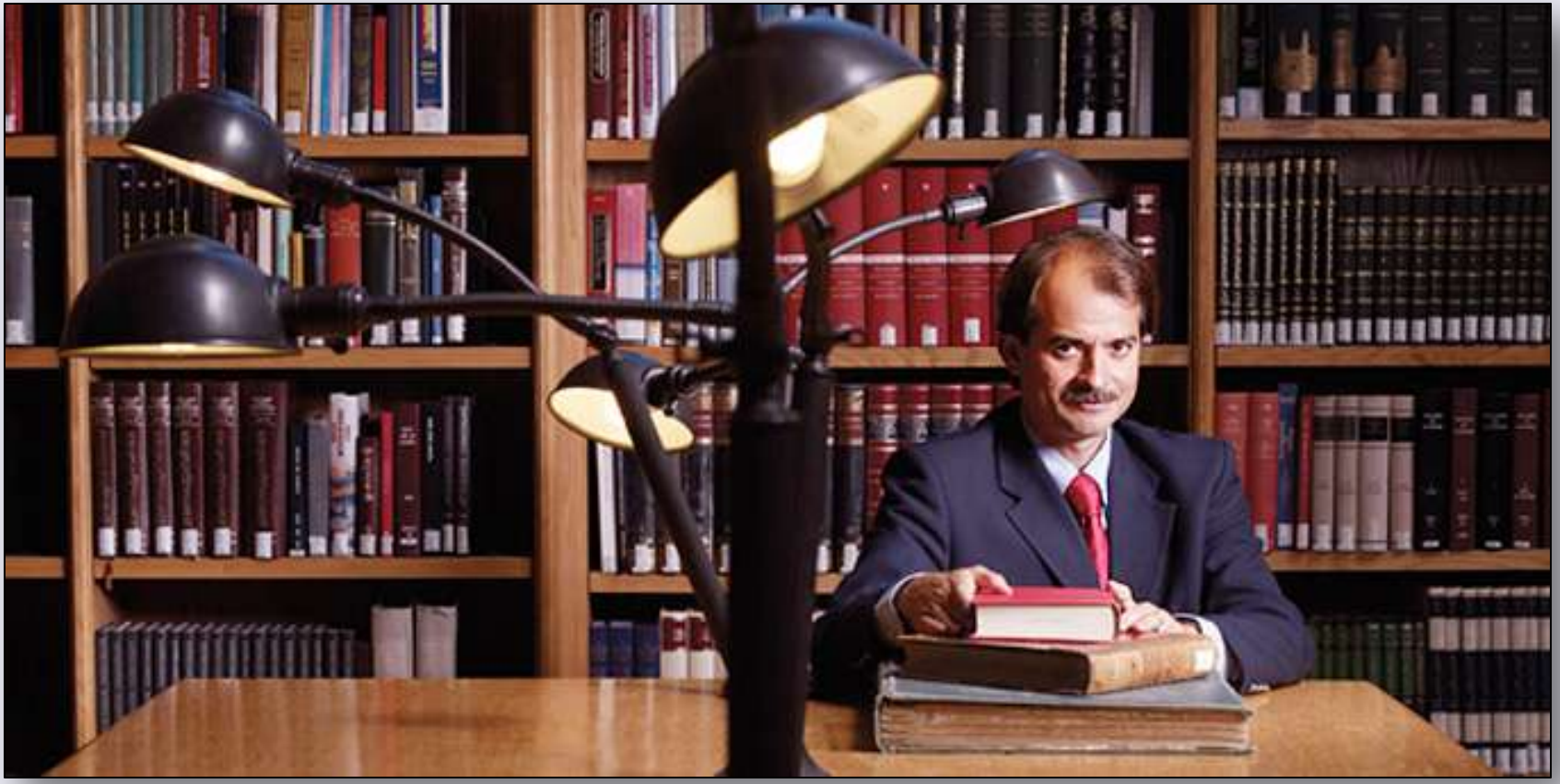
Antidepressant Consumption in Greece



Philosophy, Ethics, and Humanities in Medicine 2008, **3**:14

Effectiveness of antidepressants: an evidence myth constructed from a thousand randomized trials?

John PA Ioannidis[1,2]



NICE National Institute for Health and Care Excellence

For continuous outcomes for which an SMD was calculated (for example, when data from different versions of a scale are combined), an effect size of ~0.5 (a 'medium' effect size; Cohen, 1988) or higher was considered clinically significant. Where a WMD was calculated, a between group difference of at least three points (two points for treatment-resistant depression) was considered clinically significant for both BDI and HRSD.

Beck Depression Inventory

1. I do not feel sad.
2. I feel sad.
3. I am sad all the time and can't snap out of it.
4. I am so sad or unhappy that I can't stand it.

1. I am not particularly discouraged about the future.
2. I feel discouraged about the future.
3. I feel I have nothing to look forward to.
4. I feel that the future is hopeless and that things cannot improve.

Hamilton Rating Scale for Depression

1. **DEPRESSED MOOD** (Sadness, hopeless, helpless, worthless)

_____

0= Absent
1= These feeling states indicated only on questioning
2= These feeling states spontaneously reported verbally
3= Communicates feeling states non-verbally—i.e., through facial expression, posture, voice, and tendency to weep
4= Patient reports VIRTUALLY ONLY these feeling states in his spontaneous verbal and non-verbal communication

2. **FEELINGS OF GUILT**

_____

0= Absent
1= Self reproach, feels he has let people down
2= Ideas of guilt or rumination over past errors or sinful deeds
3= Present illness is a punishment. Delusions of guilt
4= Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations

No role for initial severity on the efficacy of antidepressants: results of a multi-meta-analy

Konstantinos N Fountoulakis[1*], Areti Angeliki Veroniki[2], Melina Siamouli[1] and Hans-Jürgen M

The use of SMD in a Bayesian RE r egression model suggests that the standardised size of anti-depressants relative to placebo (0.27–0.42), and there is no significant rol the initial severity of depression. The most ble raw HDRS change score is 2.82 (2.21–3.4 tending above 3. Our analysis

The results reported here conclude the debate on the efficacy of antidepressants




No role for initial severity on the efficacy of antidepressants: results of a multi-meta-analysis

Konstantinos N Fountoulakis[1*], Areti Angeliki Veroniki[2], Melina Siamouli[1] and Hans-Jürgen Möller[3]

Competing interests

KNF has received support concerning travel a… from various pharmaceutical companies in order to participate in medical congresses. He has also received honoraria for lectures from Astra-Zeneca, Janssen-Cilag, Eli-Lilly and a research grant from Pfizer Foundation. MS has received support concerning travel and accommodation expenses from various pharmaceutical companies. HJM has received grants or is a consultant for and on the speakership bureaus of AstraZeneca, Bristol-Myers Squibb, Eisai, Eli Lilly, GlaxoSmithKline, Janssen Cilag, Lundbeck, Merck, Novartis, Organon, Pfizer, Sanofi-Aventis, … Sepracor, Servier and Wyeth. AAV has …

4

18

Anti-depressants: Major study finds they work

By Alex Therrien
Health reporter, BBC News

22 February 2018

Scientists say they have settled one of medicine's biggest debates after a huge study found that anti-depressants work.

The study, which analysed data from 522 trials involving 116,477 people, found 21 common anti-depressants were all more effective at reducing symptoms of acute depression than dummy pills.

BBC NEWS

Anti-depressants: Major study finds they work

By Alex Therrien
Health reporter, BBC News

22 February 2018

Lead researcher Dr Andrea Cipriani, from the University of Oxford, told the BBC: "This study is the final answer to a long-standing controversy about whether anti-depressants work for depression.

Lancet 2018; 391: 1357–66

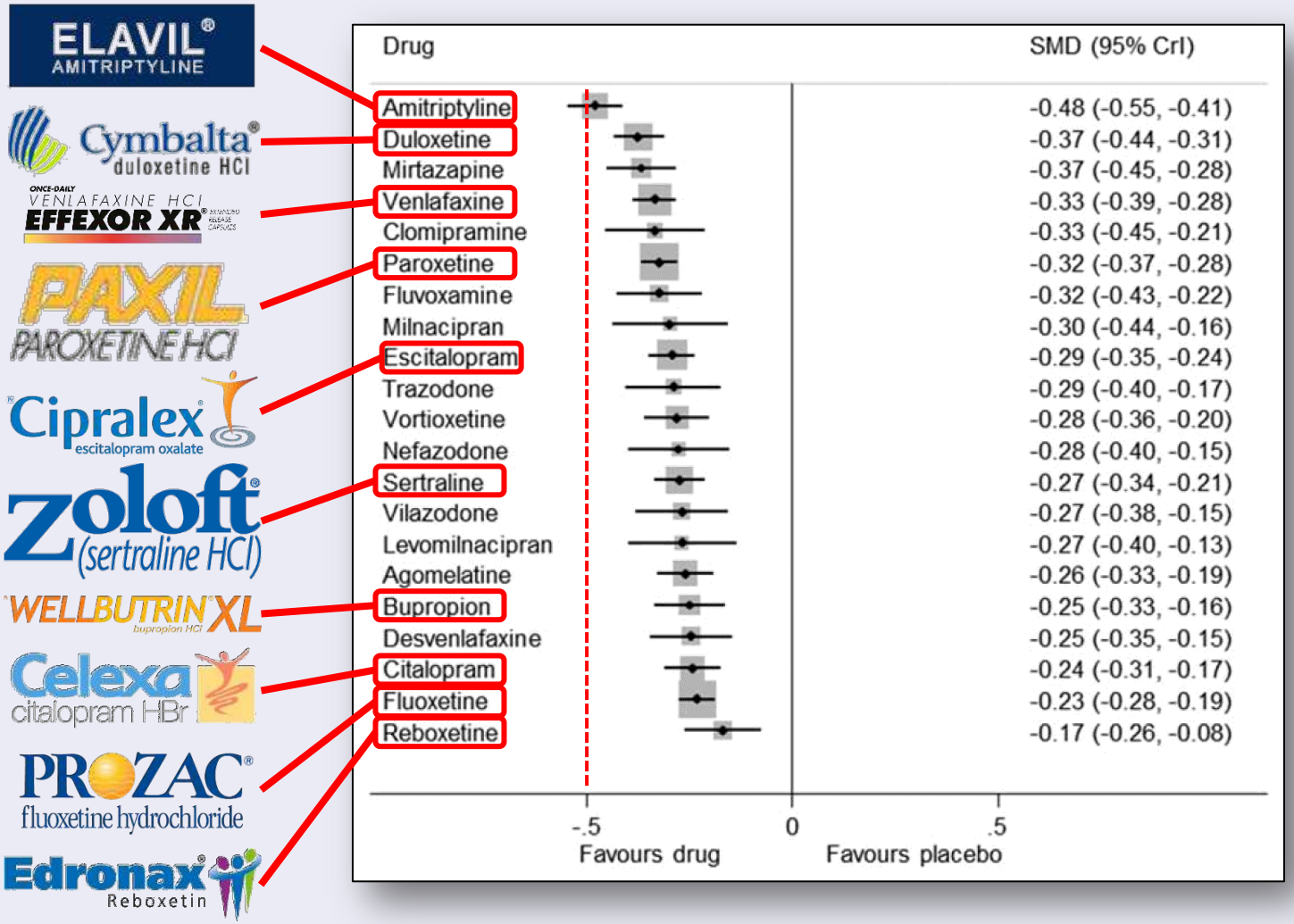
Comparative efficacy and acceptability of 21 antidepressant drugs for the acute treatment of adults with major depressive disorder: a systematic review and network meta-analysis

Andrea Cipriani, Toshi A Furukawa, Georgia Salanti*, Anna Chaimani, Lauren Z Atkinson, Yusuke Ogawa, Stefan Leucht, Henricus G Ruhe, Erick H Turner, Julian P T Higgins, Matthias Egger, Nozomi Takeshima, Yu Hayasaka, Hissei Imai, Kiyomi Shinohara, Aran Tajika, John P A Ioannidis, John R Geddes*

The relative efficacy of antidepressants compared with placebo is also shown for remission (appendix pp 152, 153). The random-effects summary SMD for all antidepressants was 0·30 (95% CrI 0·26–0·34; p<0·0001; appendix pp 150, 151). In terms of dropouts due to

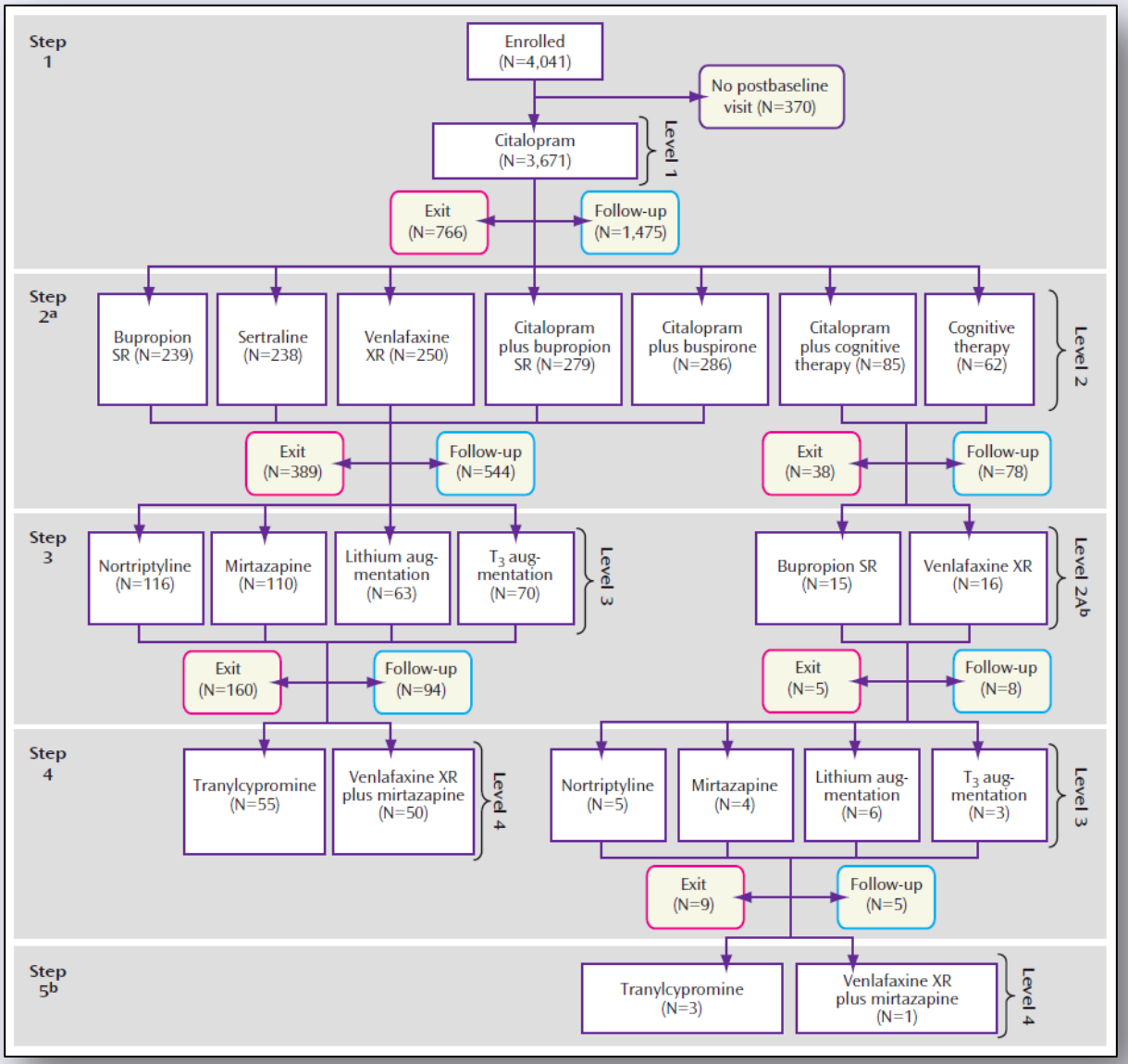
Lancet 2018; 391: 1357–66

Comparative efficacy and acceptability of 21 antidepressant drugs for the acute treatment of adults with major depressive disorder: a systematic review and network meta-analysis



STAR*D

Sequenced Treatment Alternatives to Relieve Depression



National Institute of Mental Health

Questions and Answers about the NIMH Sequenced Treatment Alternatives to Relieve Depression (STAR*D) Study — All Medication Levels

November 2006

In conclusion, about half of participants in the STAR*D study became symptom-free after two treatment levels. Over the course of all four treatment levels, almost 70 percent of those who did not withdraw from the study became symptom-free. However, the rate

The STAR*D study: Treating depression in the real world

BRADLEY N. GAYNES, MD, MPH*
Associate Professor of Psychiatry, University of North Carolina School of Medicine; Investigator, Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study

A. JOHN RUSH, MD*
University of Texas Southwestern Medical Center at Dallas; Professor of Clinical Sciences and Psychiatry; Principal Investigator, STAR*D study

MADHUKAR H. TRIVEDI, MD*
University of Texas Southwestern Medical Center at Dallas; Professor of Psychiatry; National Coordinating Center, STAR*D study

STEPHEN R. WISNIEWSKI, PhD*
University of Pittsburgh School of Medicine; Associate Professor of Epidemiology; Data Coordinating Center, STAR*D study

DONALD SPENCER, MD, MBA*
University of North Carolina School of Medicine; Professor of Family Medicine; Investigator, STAR*D study

MAURIZIO FAVA, MD*
Massachusetts General Hospital, Boston; Professor of Psychiatry; Investigator, STAR*D study

- For patients who present with major depressive disorder, STAR*D suggests that with persistence and aggressive yet feasible care, there is hope: after one round, approximately 30% will have a remission; after two rounds, 50%; after three rounds, 60%; and after four rounds, 70%.

The theoretical cumulative remission rate after four acute treatment steps was 67%.

CanJPsychiatry 2015;60(1):9–13

The STAR*D Trial: It Is Time to Reexamine the Clinical Beliefs That Guide the Treatment of Major Depression

H Edmund Pigott, PhD[1]

telephonic QIDS-SR assessments. After up to 4 rounds of AD drug–drug combination treatments, the cumulative rate of patients who did not have a confirmed relapse improved to only 23.5%. When drop out is added, the durability of treatment effects is even paltrier. Only 2.7% of patients had a QIDS-SR determined remission after up to 4 rounds of AD drug care and neither relapsed nor dropped out as evidenced by taking at least 1 of the months 10-to-12 QIDS-SR telephonic assessments and not scoring as having relapsed in any of the 12 monthly administered assessments.

N Engl J Med 2008;358:252-60.

Selective Publication of Antidepressant Trials and Its Influence on Apparent Efficacy

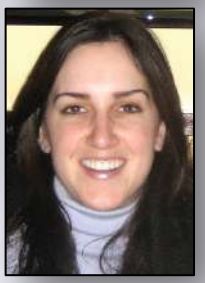
Erick H. Turner, M.D., Annette M. Matthews, M.D., Eftihia Linardatos, B.S., Robert A. Tell, L.C.S.W., and Robert Rosenthal, Ph.D.

Published literature: 94% of the trials were positive

FDA database: 51% of the trials were positive

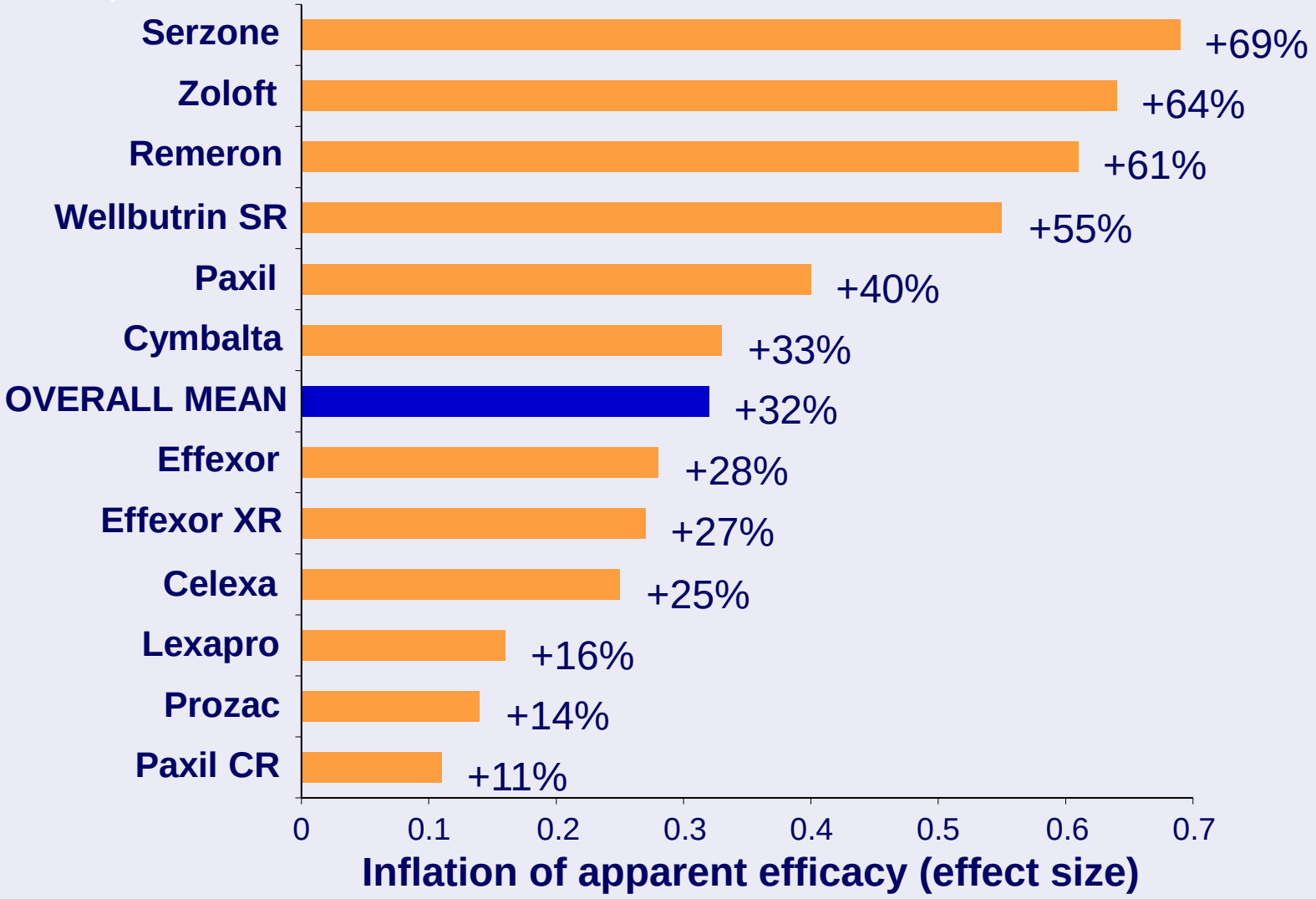
RESULTS

...by the FDA ...ble results w... ...ther not publishe... ...in a way that, in our opinion, conveyed a positive outcome (11 s...es). According to the published literature, it appeared that 94% of the trials conducted were positive. By contrast, the FDA analysis showed that 51% were positive. Separate meta-analyses of the FDA and journal data sets showed that the increase in effect size ranged from 11 to 69% for individual drugs and was 32% overall.



N Engl J Med 2008;358:252-60.

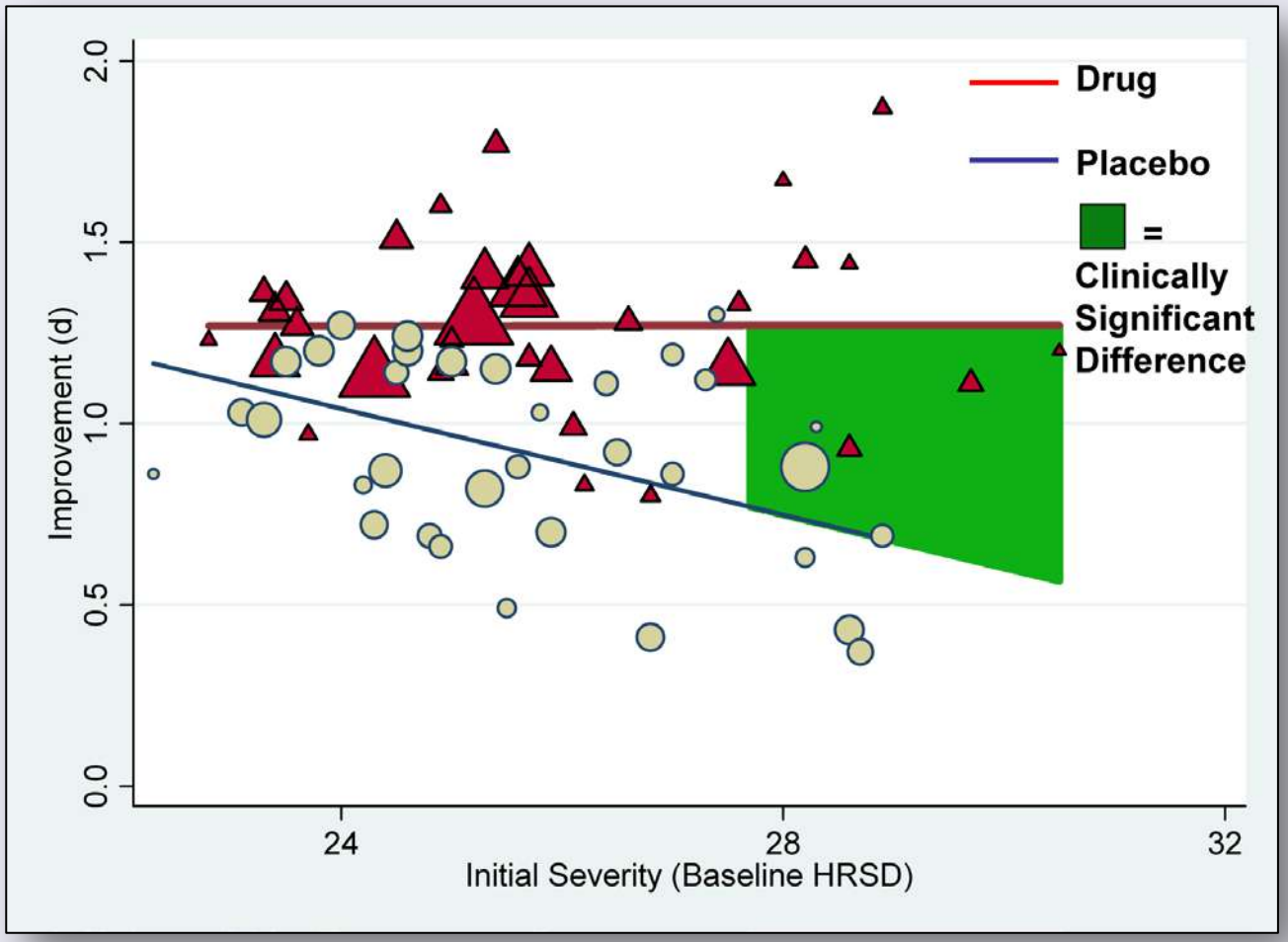
Selective Publication of Antidepressant Trials and Its Influence on Apparent Efficacy



PLOS MEDICINE 2008 | Volume 5 | Issue 2 | e45

Initial Severity and Antidepressant Benefits: A Meta-Analysis of Data Submitted to the Food and Drug Administration

Irving Kirsch[1*], Brett J. Deacon[2], Tania B. Huedo-Medina[3], Alan Scoboria[4], Thomas J. Moore[5], Blair T. Johnson[3]



Irving Kirsch

Antidepressants: Examples of Possible Side Effects

Relatively minor; usually short-lived

- Diarrhea
- Dizziness
- Dry mouth
- Headaches
- Nausea
- Sweating
- Tremors

More serious. Can be dangerous.
May need to switch drugs if they persist.

- Drowsiness or confusion
- Feeling of panic or dread
- Increased thoughts of suicide
- Insomnia
- Loss of libido, difficulty achieving erections, inability to reach orgasm
- Nervousness and agitation
- Weight gain

WARNING: Suicidality and Antidepressant Drugs

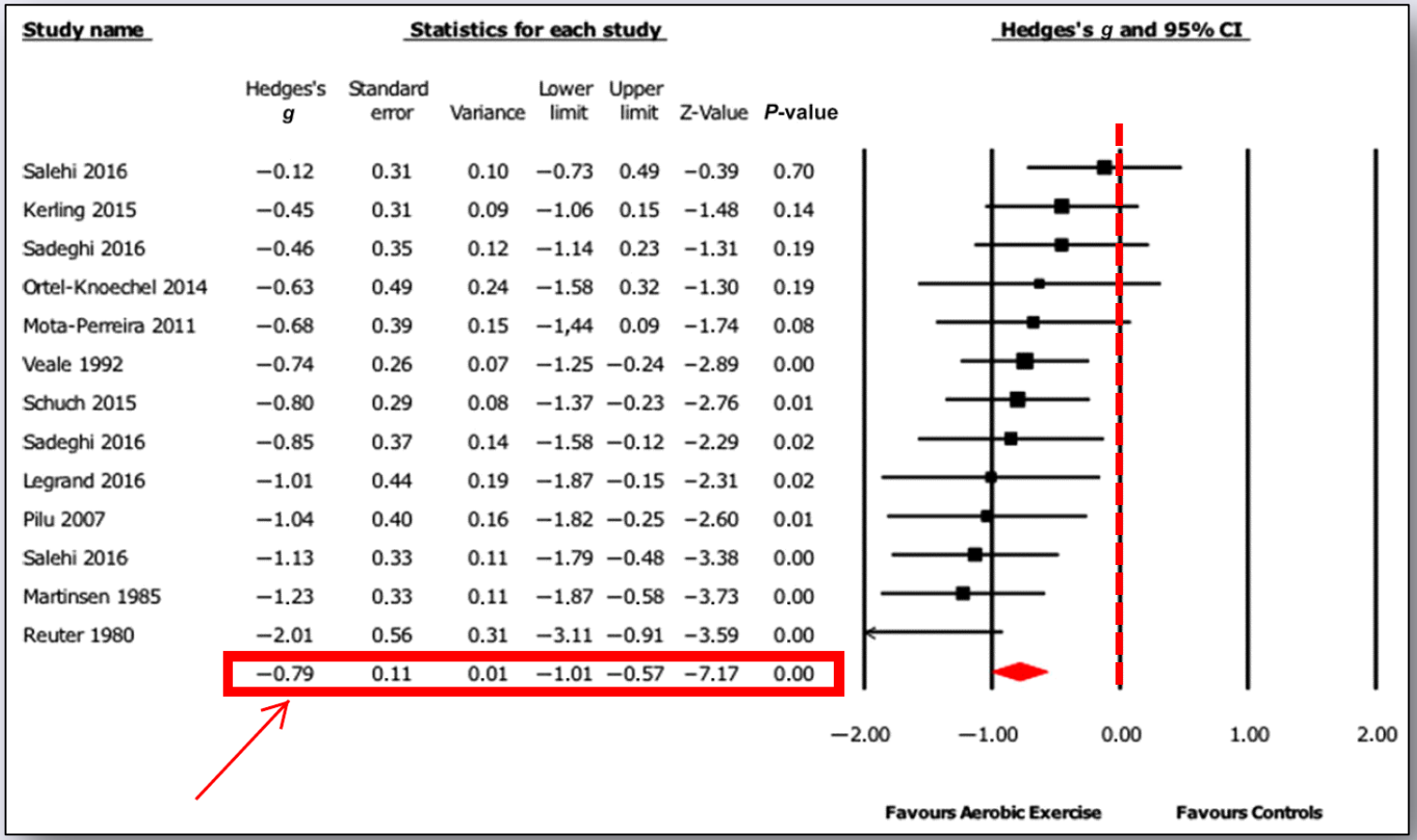
See full prescribing information for complete boxed warning.

- **Increased risk of suicidal thinking and behavior in children, adolescents, and young adults taking antidepressants for major depressive disorder (MDD) and other psychiatric disorders. Cymbalta is not approved for use in pediatric patients (5.1).**

Depress Anxiety. 2018;

Aerobic exercise for adult patients with major depressive disorder in mental health services: A systematic review and meta-analysis

Ioannis D. Morres[1] | Antonis Hatzigeorgiadis[1] | Afroditi Stathi[2] | Nikos Comoutos[1] | Chantal Arpin-Cribbie[3] | Charalampos Krommidas[1] | Yannis Theodorakis[1]

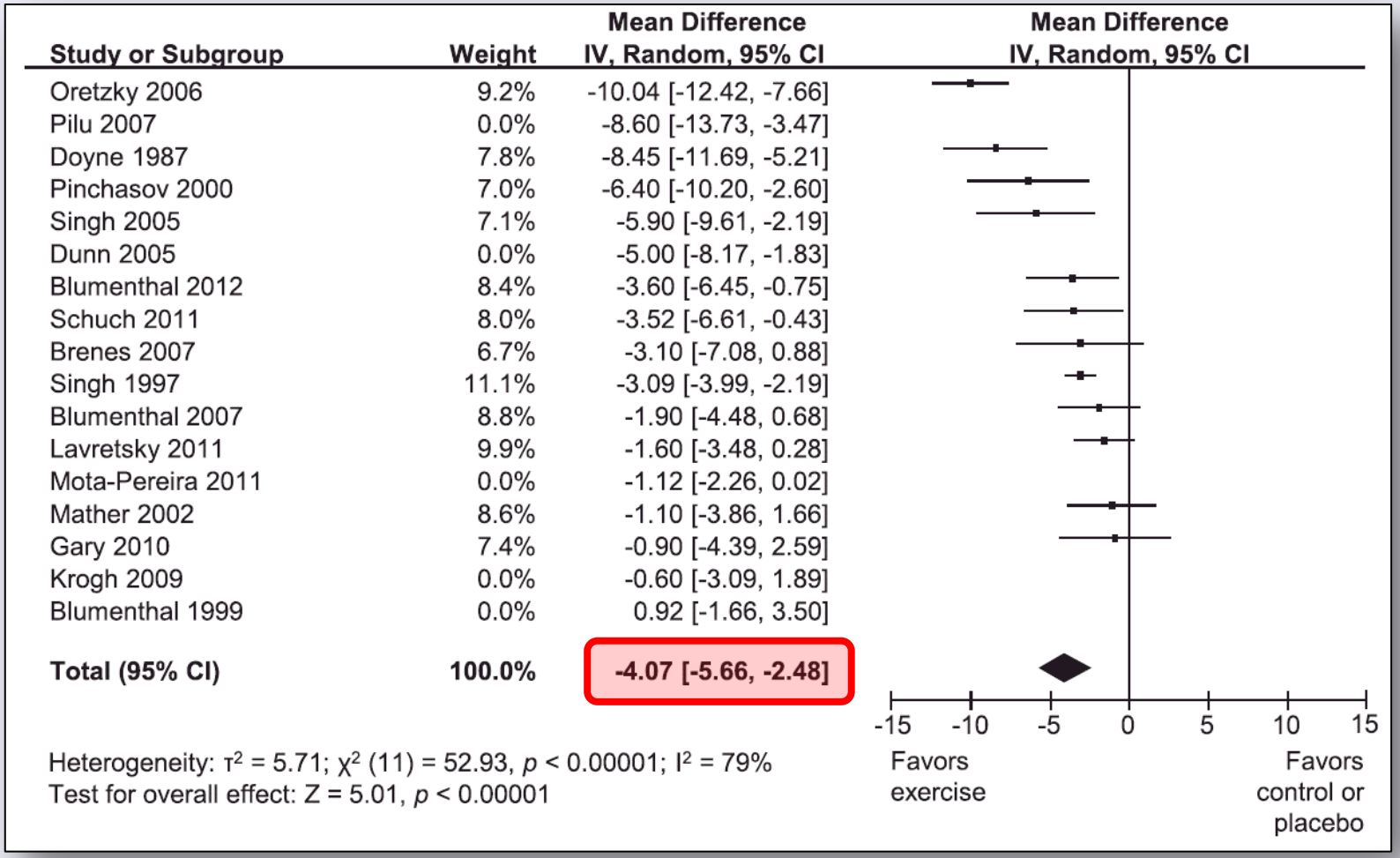


Study name	Hedges's *g*	Standard error	Variance	Lower limit	Upper limit	Z-Value	*P*-value
Salehi 2016	−0.12	0.31	0.10	−0.73	0.49	−0.39	0.70
Kerling 2015	−0.45	0.31	0.09	−1.06	0.15	−1.48	0.14
Sadeghi 2016	−0.46	0.35	0.12	−1.14	0.23	−1.31	0.19
Ortel-Knoechel 2014	−0.63	0.49	0.24	−1.58	0.32	−1.30	0.19
Mota-Perreira 2011	−0.68	0.39	0.15	−1,44	0.09	−1.74	0.08
Veale 1992	−0.74	0.26	0.07	−1.25	−0.24	−2.89	0.00
Schuch 2015	−0.80	0.29	0.08	−1.37	−0.23	−2.76	0.01
Sadeghi 2016	−0.85	0.37	0.14	−1.58	−0.12	−2.29	0.02
Legrand 2016	−1.01	0.44	0.19	−1.87	−0.15	−2.31	0.02
Pilu 2007	−1.04	0.40	0.16	−1.82	−0.25	−2.60	0.01
Salehi 2016	−1.13	0.33	0.11	−1.79	−0.48	−3.38	0.00
Martinsen 1985	−1.23	0.33	0.11	−1.87	−0.58	−3.73	0.00
Reuter 1980	−2.01	0.56	0.31	−3.11	−0.91	−3.59	0.00
	−0.79	0.11	0.01	−1.01	−0.57	−7.17	0.00

Honey, I shrunk the pooled SMD! Guide to critical appraisal of systematic reviews and meta-analyses using the Cochrane review on exercise for depression as example

Panteleimon Ekkekakis*

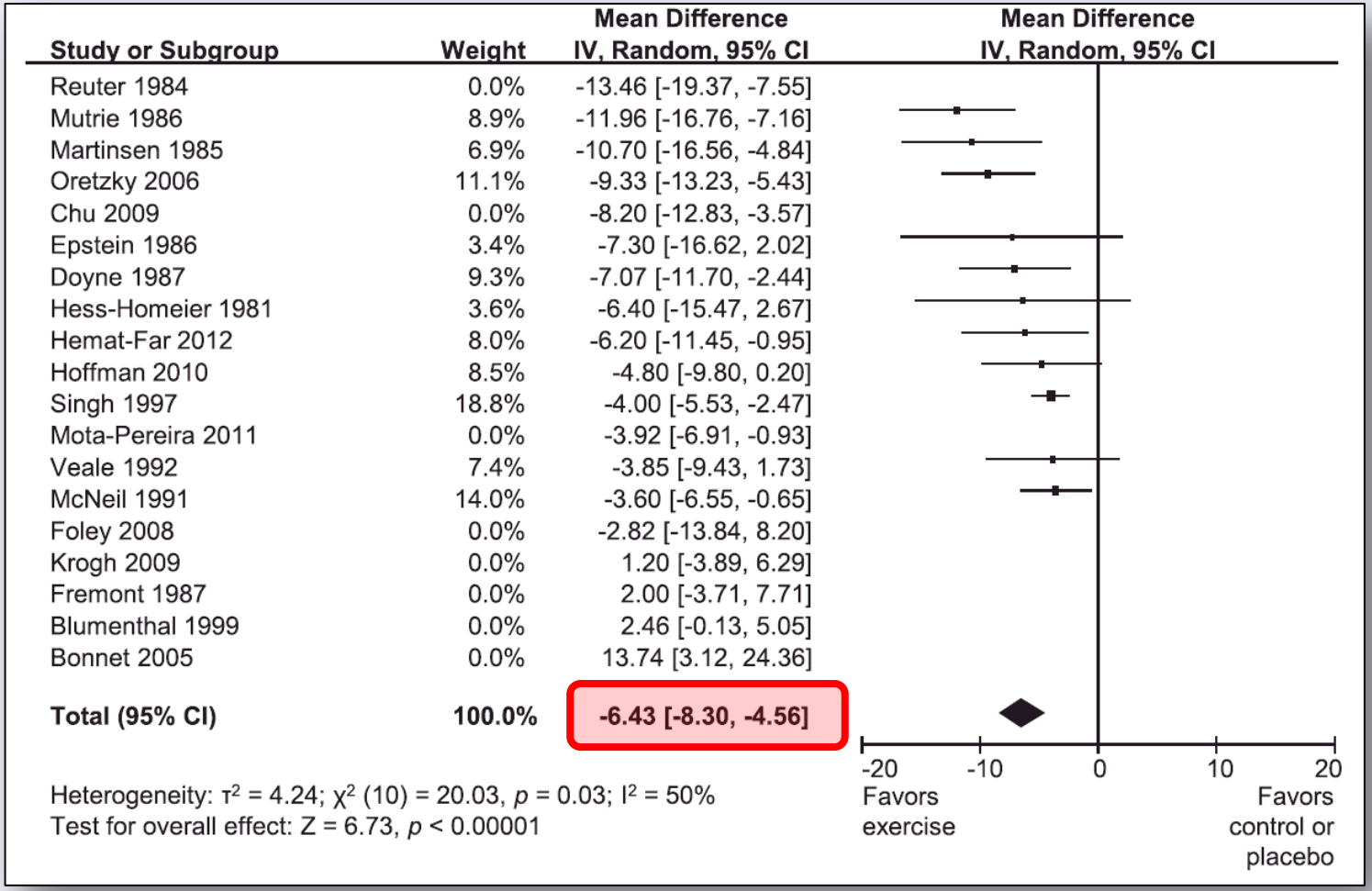
Hamilton Rating Scale for Depression (HRSD)



Honey, I shrunk the pooled SMD! Guide to critical appraisal of systematic reviews and meta-analyses using the Cochrane review on exercise for depression as example

Panteleimon Ekkekakis*

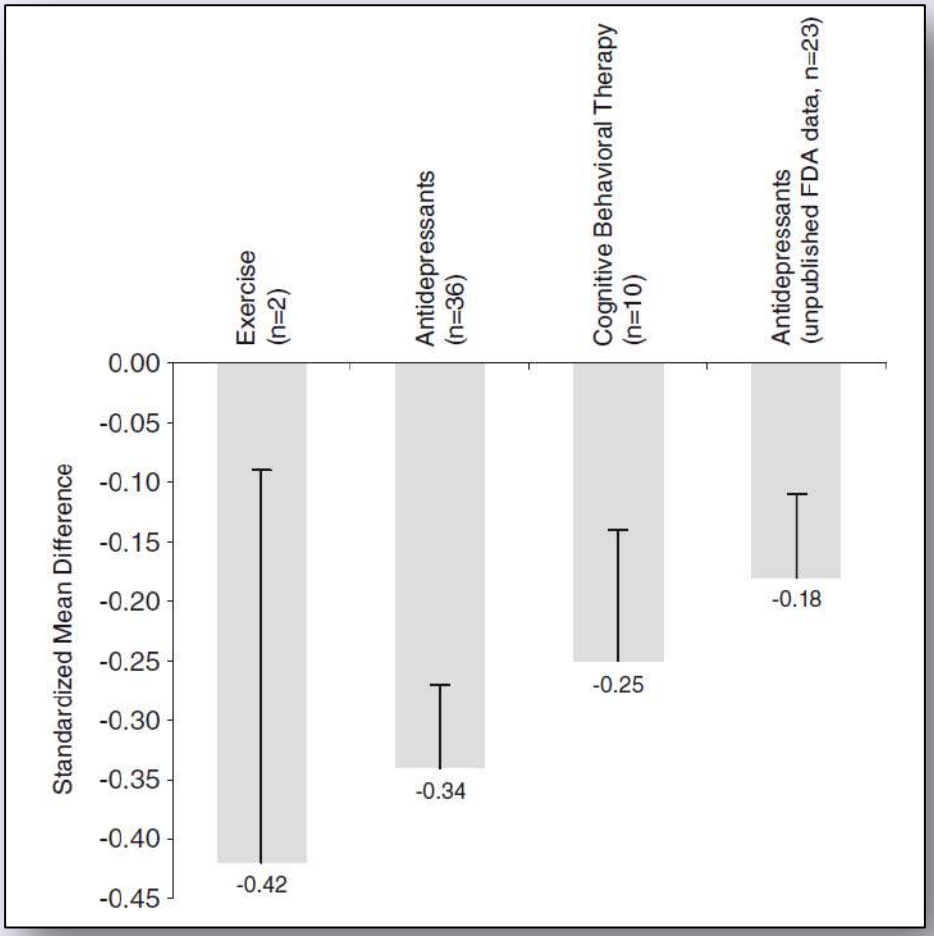
Beck Depression Inventory (BDI)



Exercise as antidepressant treatment: Time for the transition from trials to clinic?

Panteleimon Ekkekakis[a,*], Martino Belvederi Murri[b]

Compared to pill placebo



Exercise for depression (Review)

Cooney GM, Dwan K, Greig CA, Lawlor DA, Rimer J, Waugh FR, McMurdo M, Mead GE

THE COCHRANE COLLABORATION

Compared to Antidepressant Medications

Study or subgroup	Exercise N	Mean(SD)	Antidepressants N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Blumenthal 1999	53	8.19 (5.97)	48	7.81 (6.49)		33.9 %	0.06 [-0.33, 0.45]
Blumenthal 2007	51	9.2 (6.1)	49	10.1 (6.9)		33.5 %	-0.14 [-0.53, 0.26]
Blumenthal 2012a	35	6.4 (5.28)	39	8.4 (5.26)		24.4 %	-0.38 [-0.84, 0.08]
Brenes 2007	14	7.8 (4.3)	11	7.4 (4.7)		8.3 %	0.09 [-0.70, 0.88]
Total (95% CI)	**153**		**147**			**100.0 %**	**-0.11 [-0.34, 0.12]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 2.27$, df = 3 (P = 0.52); $I^2 = 0.0\%$

Test for overall effect: Z = 0.95 (P = 0.34)

Test for subgroup differences: Not applicable

-1 -0.5 0 0.5 1

Favours exercise Favours antidepressa

Exercise for depression (Review)

Cooney GM, Dwan K, Greig CA, Lawlor DA, Rimer J, Waugh FR, McMurdo M, Mead GE

THE COCHRANE COLLABORATION

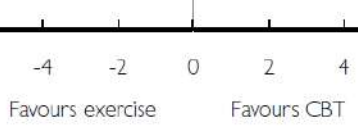
Compared to Psychotherapy

Study or subgroup	Exercise N	Exercise Mean(SD)	Cognitive Therapy N	Cognitive Therapy Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Fremont 1987	15	6.1 (6.6)	16	8 (7.1)		16.5 %	-0.27 [-0.98, 0.44]
Epstein 1986	7	9 (10.94)	9	17.22 (8.45)		7.7 %	-0.81 [-1.85, 0.23]
Hess-Homeier 1981	5	9.8 (6.93)	6	7.2 (5.03)		5.7 %	0.40 [-0.81, 1.60]
Klein 1985	14	1.03 (0.94)	14	1.23 (0.84)		15.0 %	-0.22 [-0.96, 0.53]
Setaro 1985	25	62 (6.51)	25	60.68 (6.2)		26.8 %	0.20 [-0.35, 0.76]
Fetsch 1979	8	13.63 (7.95)	8	11.63 (5.5)		8.5 %	0.28 [-0.71, 1.26]
Gary 2010	20	8.4 (5.6)	17	8.2 (6.3)		19.8 %	0.03 [-0.61, 0.68]
Total (95% CI)	**94**		**95**			**100.0 %**	**-0.03 [-0.32, 0.26]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 4.43$, $df = 6$ ($P = 0.62$); $I^2 = 0.0\%$

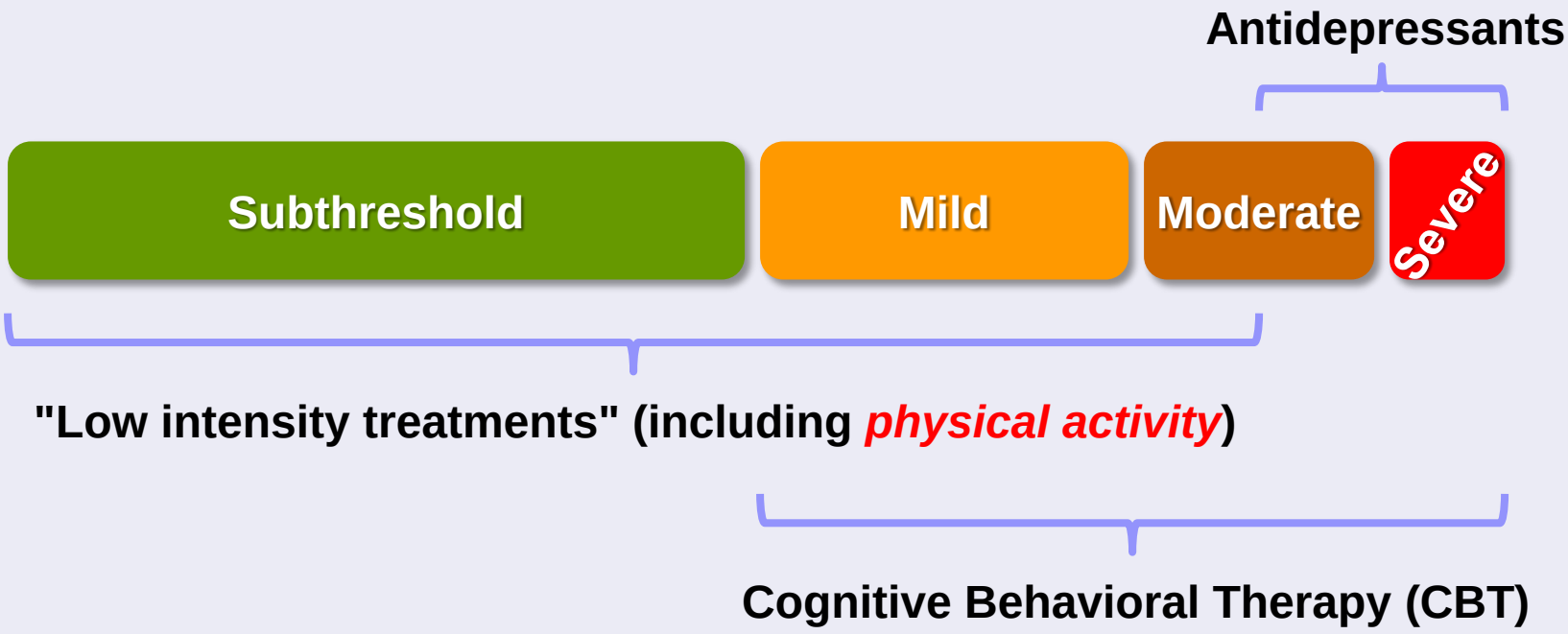
Test for overall effect: $Z = 0.22$ ($P = 0.83$)

Test for subgroup differences: Not applicable



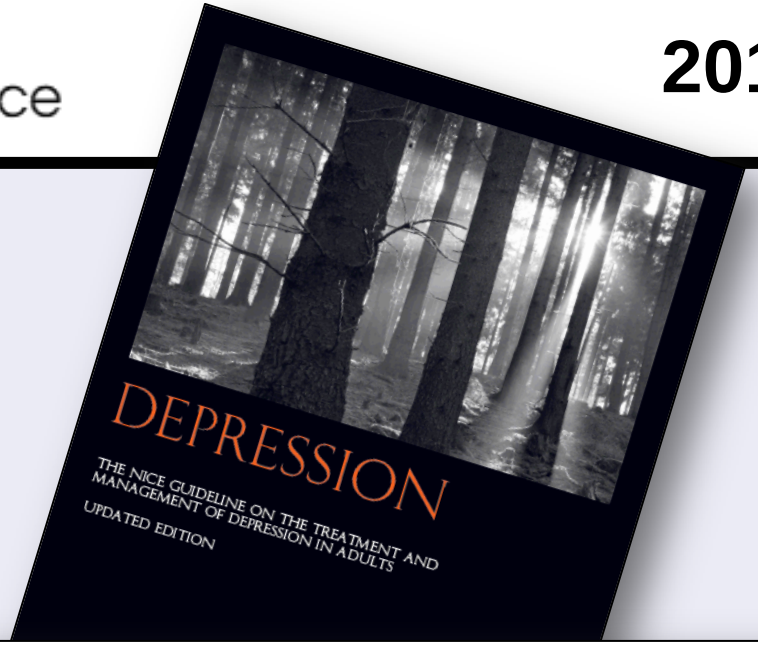
Evidence-based clinical practice / public health guidelines

"Stepped (Collaborative) Care Approach"



NICE National Institute for Health and Care Excellence

2010



7.5 RECOMMENDATIONS

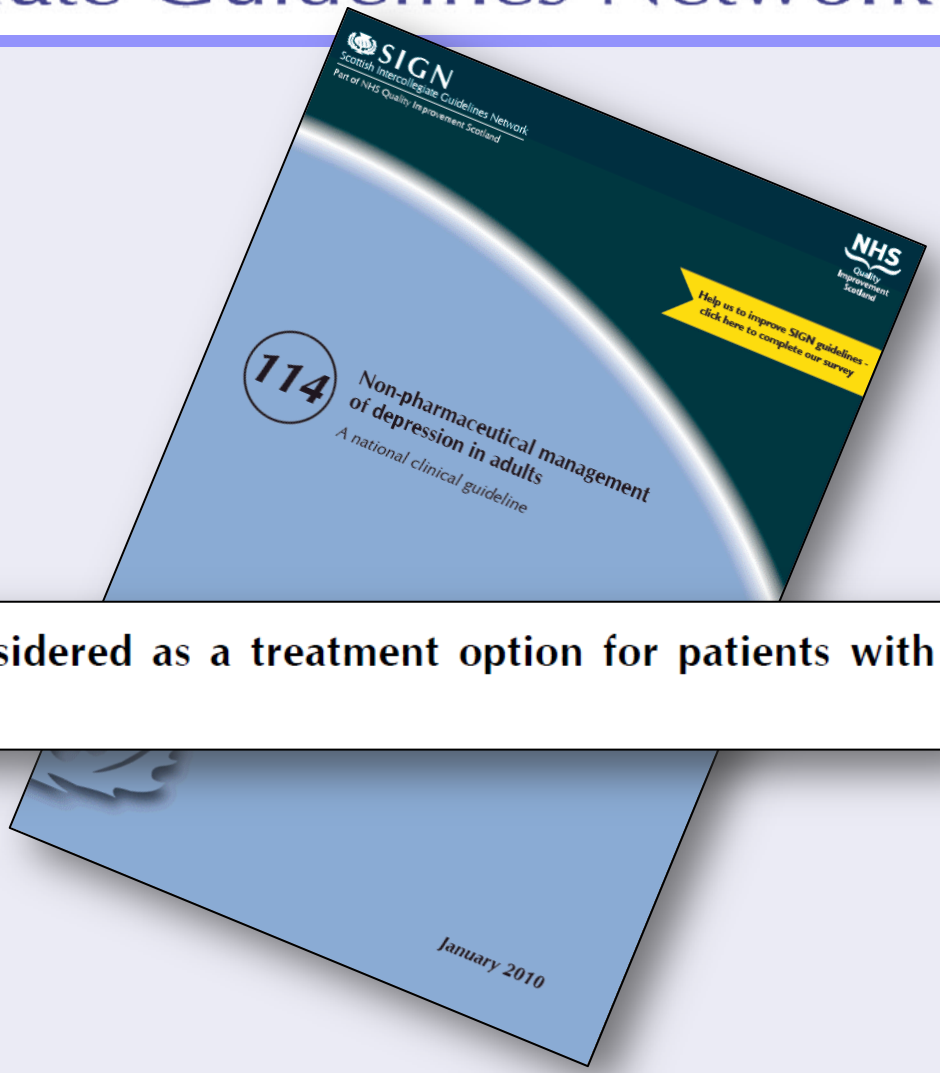
Low-intensity psychosocial interventions

7.5.1.1 For people with persistent subthreshold depressive symptoms or mild to moderate depression, consider offering one or more of the following interventions, guided by the person's preference:

- individual guided self-help based on the principles of cognitive behavioural therapy (CBT)
- computerised cognitive behavioural therapy (CCBT)[52]
- a structured group physical activity programme.

SIGN

Scottish Intercollegiate Guidelines Network



B	Structured exercise may be considered as a treatment option for patients with depression.

Trimbos instituut

Netherlands Institute of Mental Health and Addiction

In patients who report with mild depression (non-suicidal, non-psychotic), with a first episode of less than 3 months, physical effort or physical activity should be considered as first-step intervention.

If after a period of 3 months with physical exertion or physical activity no or insufficient effect appears, another intervention should be considered.

In patients who report with mild depression (non-suicidal, non-psychotic), with a first episode lasting more than 3 months or a relapse, consideration should be given to adding physical exercise or physical activity to the basic interventions.

In patients who report with a (moderately) severe depression (non-suicidal, non-psychotic), with a first episode or recurrence, consideration should be given to adding physical exertion or physical activity to the basic interventions.

Canadian Journal of Psychiatry 2016, Vol. 61(9) 576-587

Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 Clinical Guidelines for the Management of Adults with Major Depressive Disorder: Section 5. Complementary and Alternative Medicine Treatments

Arun V. Ravindran, MB, PhD[1], Lynda G. Balneaves, PhD[1], Guy Faulkner, PhD[2], Abigail Ortiz, MD, MSc[3], Diane McIntosh, MD[4], Rachel L. Morehouse, MD[5], Lakshmi Ravindran, MD[1], Lakshmi N. Yatham, MB, MBA (Exec)[4], Sidney H. Kennedy, MD[1], Raymond W. Lam, MD[4], Glenda M. MacQueen, MD, PhD[6], Roumen V. Milev, MD, PhD[7], Sagar V. Parikh, MD[1,8], and the CANMAT Depression Work Group[9]

Table 2. Summary of Recommendations for Physical and Meditative Treatments.

Intervention	Indication	Recommendation	Evidence	Monotherapy or Adjunctive Therapy
Exercise	Mild to moderate MDD	First line	Level 1	Monotherapy
	Moderate to severe MDD	Second line	Level 1	Adjunctive

Australian & New Zealand Journal of Psychiatry 2015, Vol. 49(12) 1087–1206

Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders

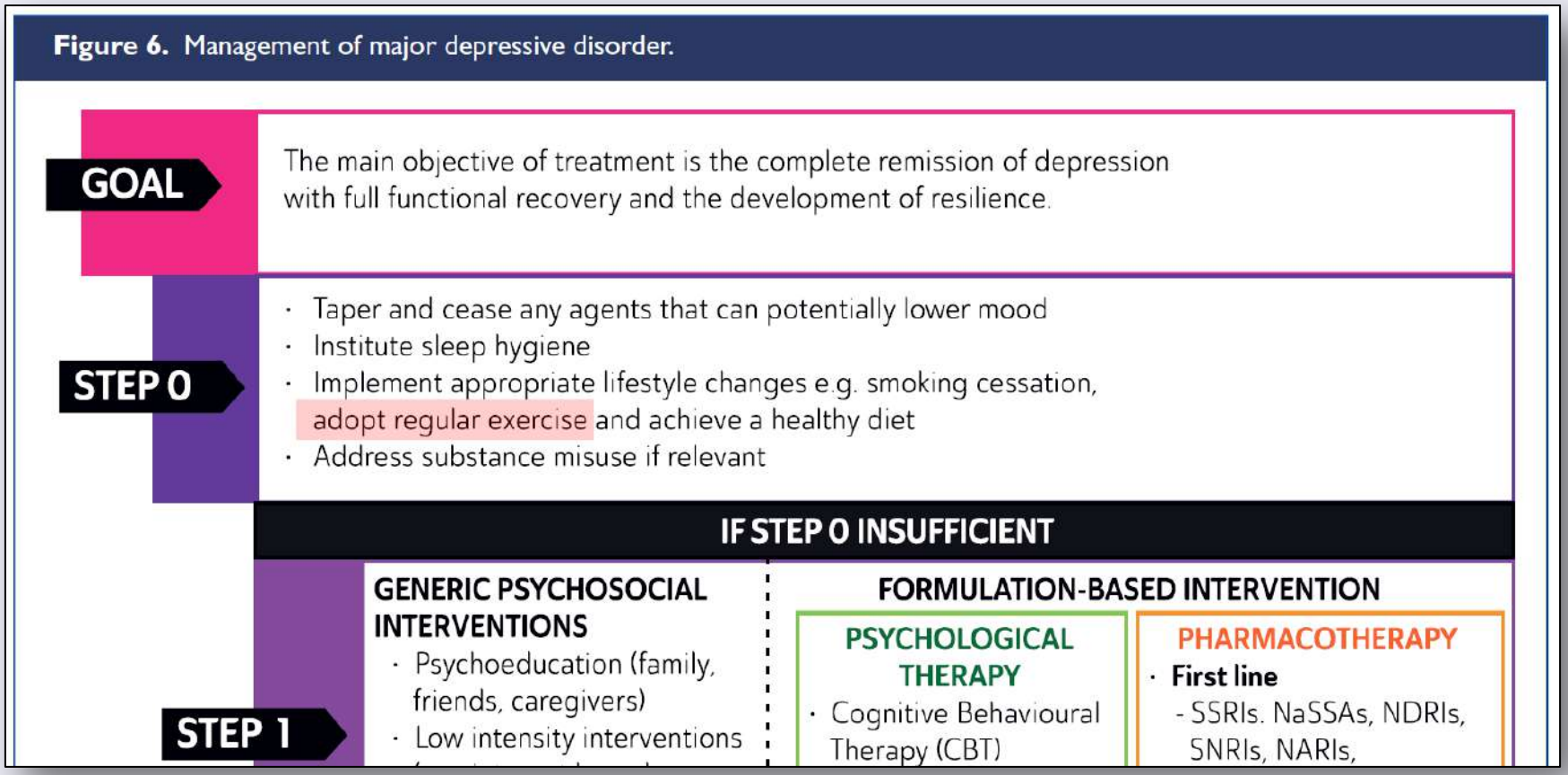


Figure 6. Management of major depressive disorder.

GOAL

The main objective of treatment is the complete remission of depression with full functional recovery and the development of resilience.

STEP 0

- Taper and cease any agents that can potentially lower mood
- Institute sleep hygiene
- Implement appropriate lifestyle changes e.g. smoking cessation, adopt regular exercise and achieve a healthy diet
- Address substance misuse if relevant

IF STEP 0 INSUFFICIENT

STEP 1

GENERIC PSYCHOSOCIAL INTERVENTIONS

- Psychoeducation (family, friends, caregivers)
- Low intensity interventions

FORMULATION-BASED INTERVENTION

PSYCHOLOGICAL THERAPY

- Cognitive Behavioural Therapy (CBT)

PHARMACOTHERAPY

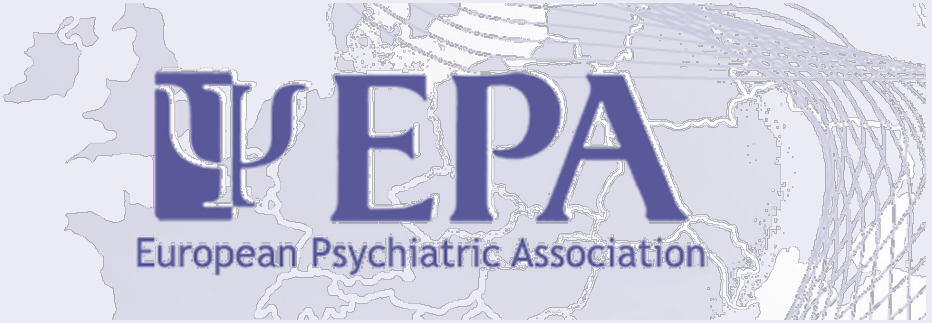
- **First line**
  - SSRIs. NaSSAs, NDRIs, SNRIs, NARIs,

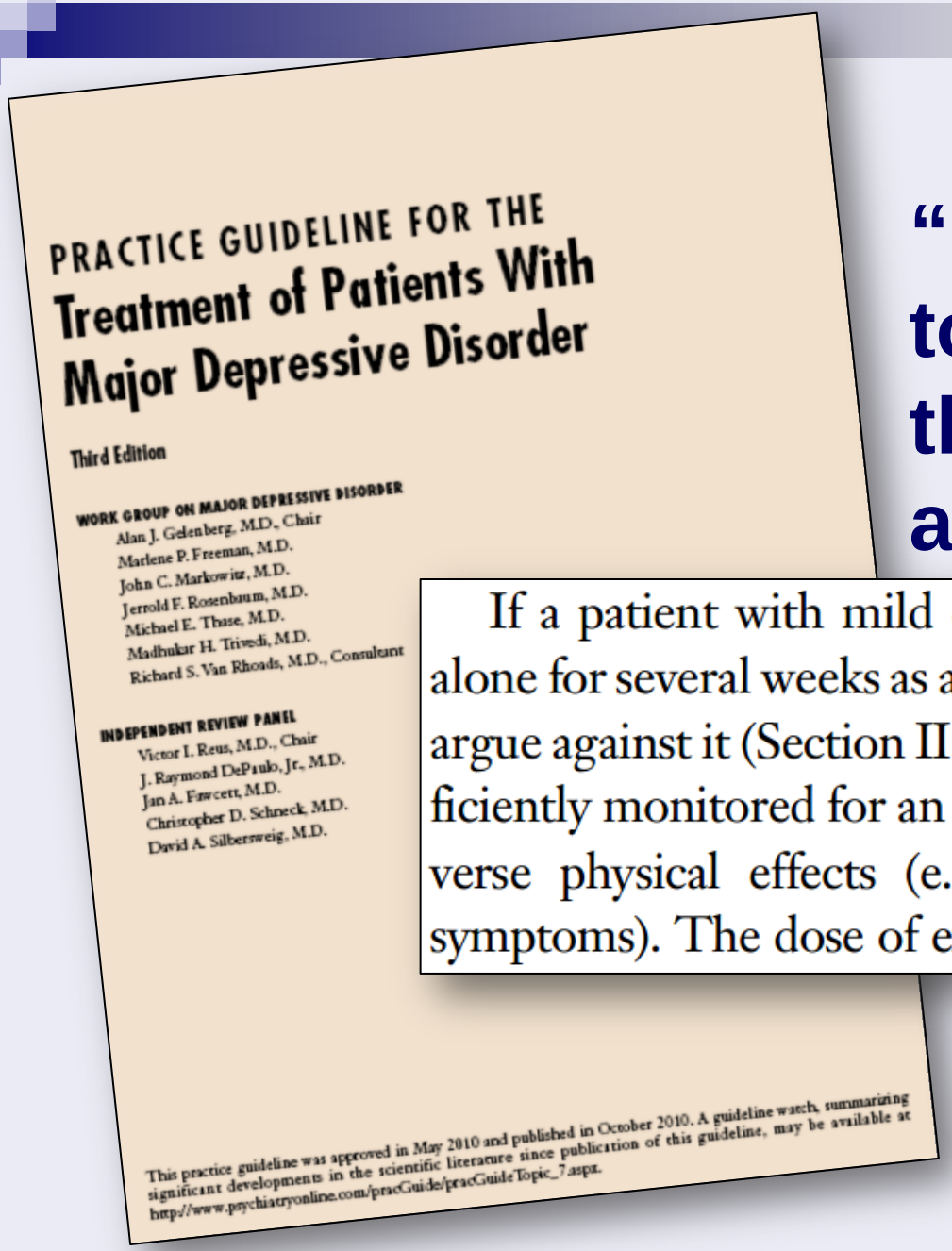
European Psychiatry 54 (2018) 124–144

EPA guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and Position Statement from the European Psychiatric Association (EPA), supported by the International Organization of Physical Therapists in Mental Health (IOPTMH)

Brendon Stubbs[a,b,*], Davy Vancampfort[c], Mats Hallgren[d], Joseph Firth[e,f], Nicola Veronese[g], Marco Solmi[h], Serge Brand[i,j,k], Joachim Cordes[l], Berend Malchow[m], Markus Gerber[j], Andrea Schmitt[m,n], Christoph U. Correll[o,p,q], Marc De Hert[r], Fiona Gaughran[a,b], Frank Schneider[s], Florence Kinnafick[t], Peter Falkai[m], Hans-Jürgen Möller[m], Kai G. Kahl[u]

recommendations. For MDD, consistent evidence indicated that PA can improve depressive symptoms versus control conditions, with effects comparable to those of antidepressants and psychotherapy. PA can also improve cardiorespiratory fitness and quality of life in people with MDD, although the impact on physical health outcomes was limited. There were no differences in adverse events versus control conditions. For MDD, larger effect sizes were seen when PA was delivered at moderate-vigorous intensity and supervised by an exercise specialist. For schizophrenia-spectrum disorders, evidence





PRACTICE GUIDELINE FOR THE
Treatment of Patients With
Major Depressive Disorder

Third Edition

WORK GROUP ON MAJOR DEPRESSIVE DISORDER
Alan J. Gelenberg, M.D., Chair
Marlene P. Freeman, M.D.
John C. Markowitz, M.D.
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David A. Silbersweig, M.D.

This practice guideline was approved in May 2010 and published in October 2010. A guideline watch, summarizing significant developments in the scientific literature since publication of this guideline, may be available at http://www.psychiatryonline.com/pracGuide/pracGuideTopic_7.aspx.

"If a patient wishes to try exercise... there is little to argue against it..."

If a patient with mild depression wishes to try exercise alone for several weeks as a first intervention, there is little to argue against it (Section II.A.10), provided the patient is sufficiently monitored for an abrupt worsening of mood or adverse physical effects (e.g., ischemia or musculoskeletal symptoms). The dose of exercise and adherence to an exer-

AMERICAN PSYCHIATRIC ASSOCIATION
BENJAMIN RUSH, M.D.
1844

Severity of Illness	Modality			
	Pharmacotherapy	Depression-Focused Psychotherapy	Pharmacotherapy in Combination With Depression-Focused Psychotherapy	Electroconvulsive Therapy
Mild to Moderate	Yes	Yes	May be useful for patients with psychosocial or interpersonal problems, intrapsychic conflict, or co-occurring Axis II disorder	Yes, for certain patients
Severe Without Psychotic Features	Yes	No	Yes	Yes
Severe With Psychotic Features	Yes, provide both antidepressant and antipsychotic medication	No	Yes, provide both antidepressant and antipsychotic medication	Yes

FIGURE 1. Recommended Modalities for Acute Phase Treatment of Major Depressive Disorder

Journal of Evaluation in Clinical Practice 19 (2013) 674–681

Conflicts of interest and the quality of recommendations in clinical guidelines†

Lisa Cosgrove, PhD[1,2] Harold J. Bursztajn, MD[4] Deborah R. Erlich, MD, MmedEd[5], Emily E. Wheeler, MS[3] and Allen F. Shaughnessy, PharmD, MmedEd[6]

results. One-fifth (19.7%) of the references were not congruent with the recommendations. Financial ties to industry were disclosed by all members (100%) of the guideline development committee with members reporting a mean 20.5 relationships (range 9–33). The majority of the committee participated on pharmaceutical companies' speakers' bureaus.

Dr. Thase reports that he provided scientific consultation to AstraZeneca, Bristol-Myers Squibb, Eli Lilly & Company, Forest Pharmaceuticals, Inc., Gerson Lehman Group, GlaxoSmithKline, Guidepoint Global, H. Lundbeck A/S, MedAvante, Inc., Neuronetics, Inc., Novartis, Otsuka, Ortho-McNeil Pharmaceuticals, PamLab, L.L.C., Pfizer (formerly Wyeth-Ayerst Laboratories), Schering-Plough (formerly Organon), Shire U.S., Inc., Supernus Pharmaceuticals, Takeda (Lundbeck), and Transcept Pharmaceuticals. He was a member of the speakers bureaus for
nd Com-
th-Ayerst
Organon).
Company,
al Health,
the Agency for Healthcare Research and Quality, and Sepracor, Inc. He had equity holdings in MedAvante, Inc., and received royalty income from American Psychiatric Publishing, Inc., Guilford Publications, Herald House, Oxford University Press, and W.W. Norton and Company. His wife was employed as the group scientific director for Embryon (formerly Advogent), which does business with Bristol-Myers Squibb and Pfizer/Wyeth.

Large-scale implementation

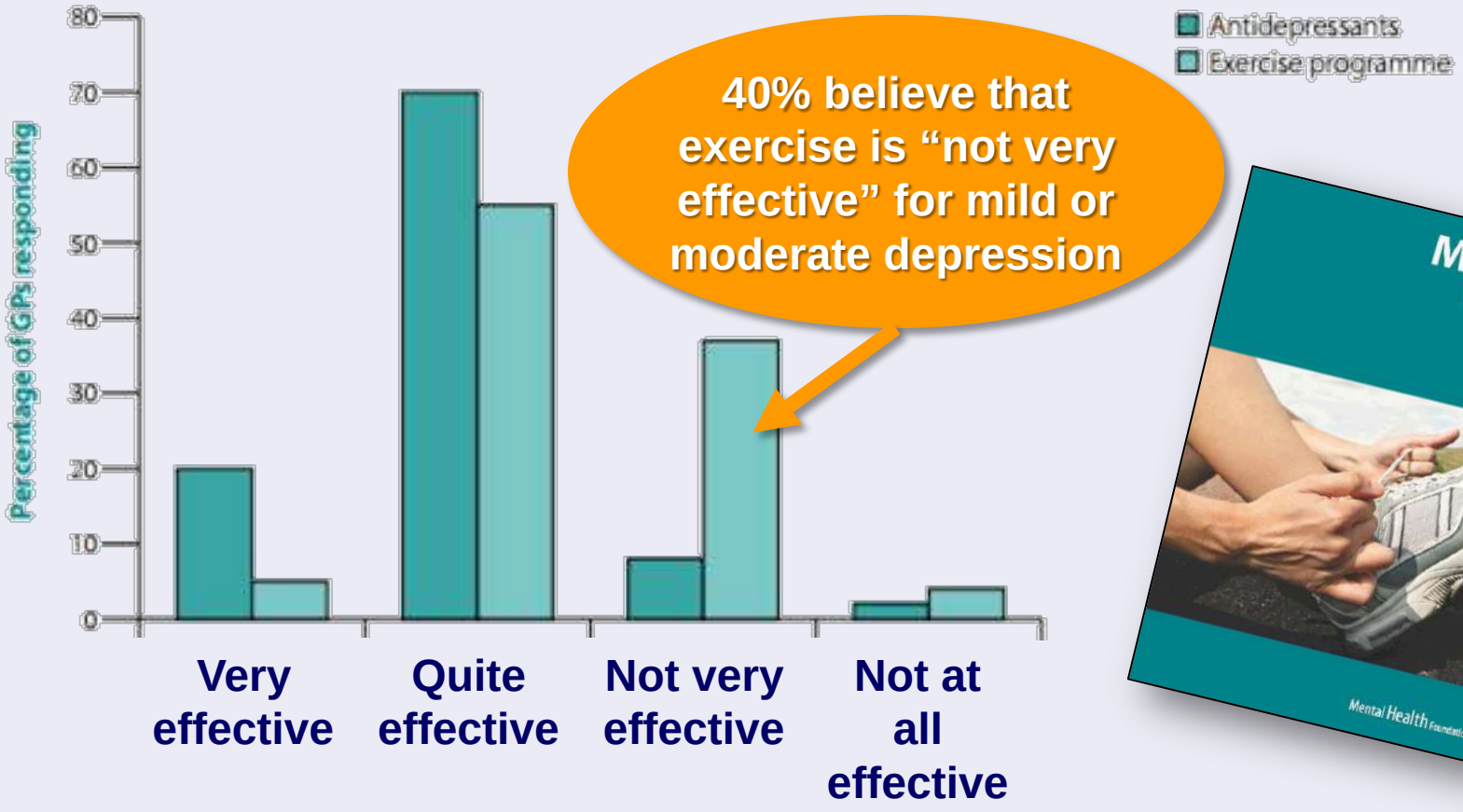
Stepped care for depression is easy to recommend, but harder to implement: results of an explorative study within primary care in the Netherlands

Marleen LM Hermens[1*], Anna Muntingh[1,2], Gerdien Franx[1], Peter T van Splunteren[1] and Jasper Nuyen[1]

lifestyle advice (e.g. on healthy diet and exercise). Patients were seldom referred to group courses or to running therapy. E-health interventions were provided sparsely by both the GPs and the

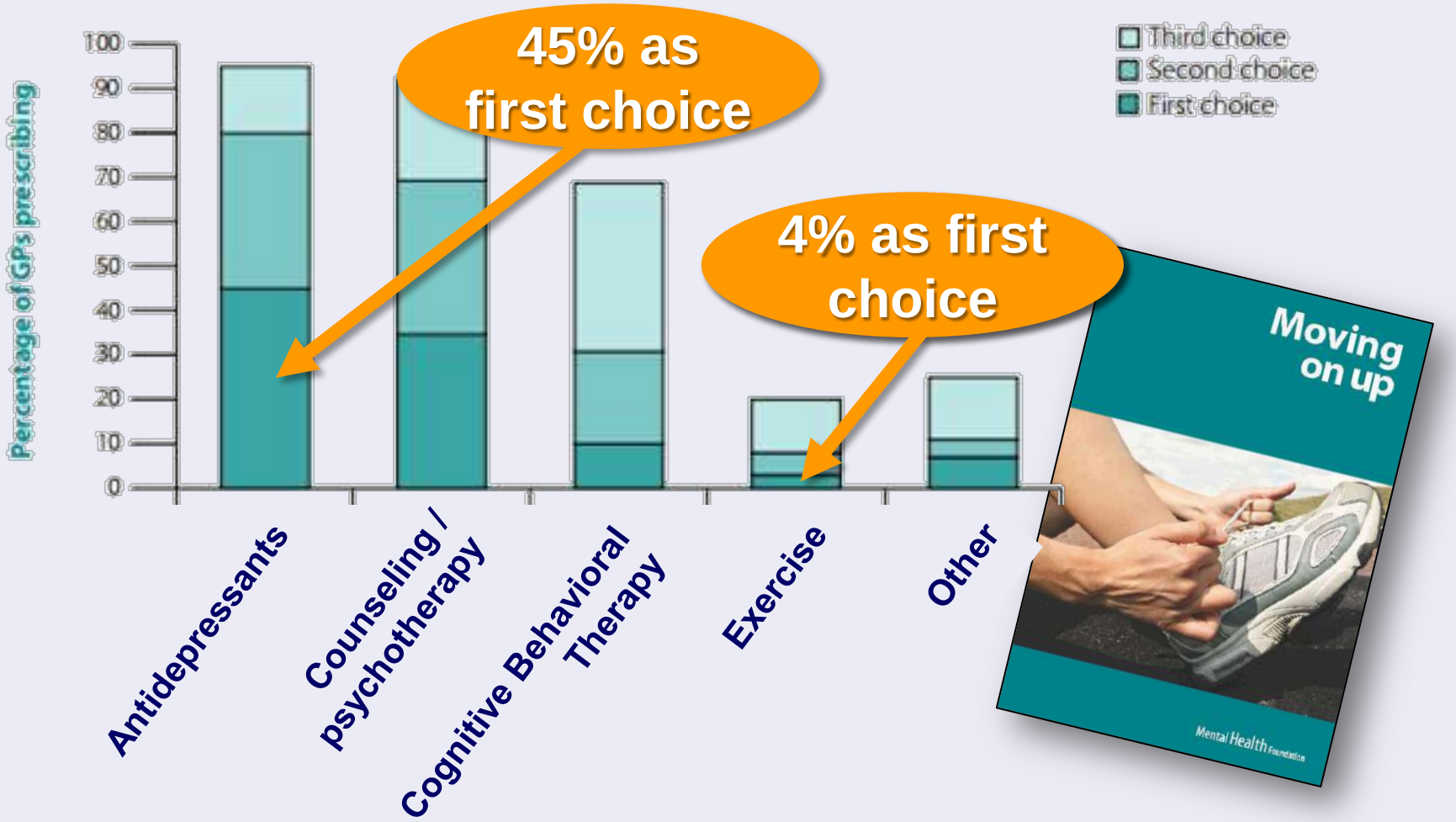
mental health foundation

Figure 1: GP perceptions of the effectiveness of exercise and antidepressants for patients with mild or moderate depression



mental health foundation

Figure 2: GP preferred choices of treatment for patients with mild or moderate depression



Nuffield Health

Prescribing exercise key to defusing 'ticking mental health time bomb'

14 October 2013

Healthcare charity calls for all GPs to consider exercise

cent) said ill health affected their mood. When asked about treatment, just one per cent of those visiting their GP were recommended exercise as a way to alleviate symptoms, compared to 46 per [illegible] the most common treatment - medication. [illegible] scribed medication

ADs prescribed 46% to 1% over exercise...

...but only 4% say they prefer ADs to exercise

British Journal of Hospital Medicine, 1990, 43(2), 107

Psychiatric benefits of physical exercise

Peter Salmon

The first arises from the slight unreality of the 'method' sections in many of the published studies; it is typically stated that the depressed subjects have been allocated to such activities as running or aerobics, or even swimming or skiing. This must puzzle clinicians who, in treating depressed people, often have to contend with an absence of motivation to tackle much less strenuous features of life's routine. So what should we make of studies

[Clin Psychol Sci Prac 13: 194–197, 2006]

The Challenges of Treating Depression with Exercise: From Evidence to Practice

Richard J. Seime and Kristin S. Vickers, Mayo Clinic

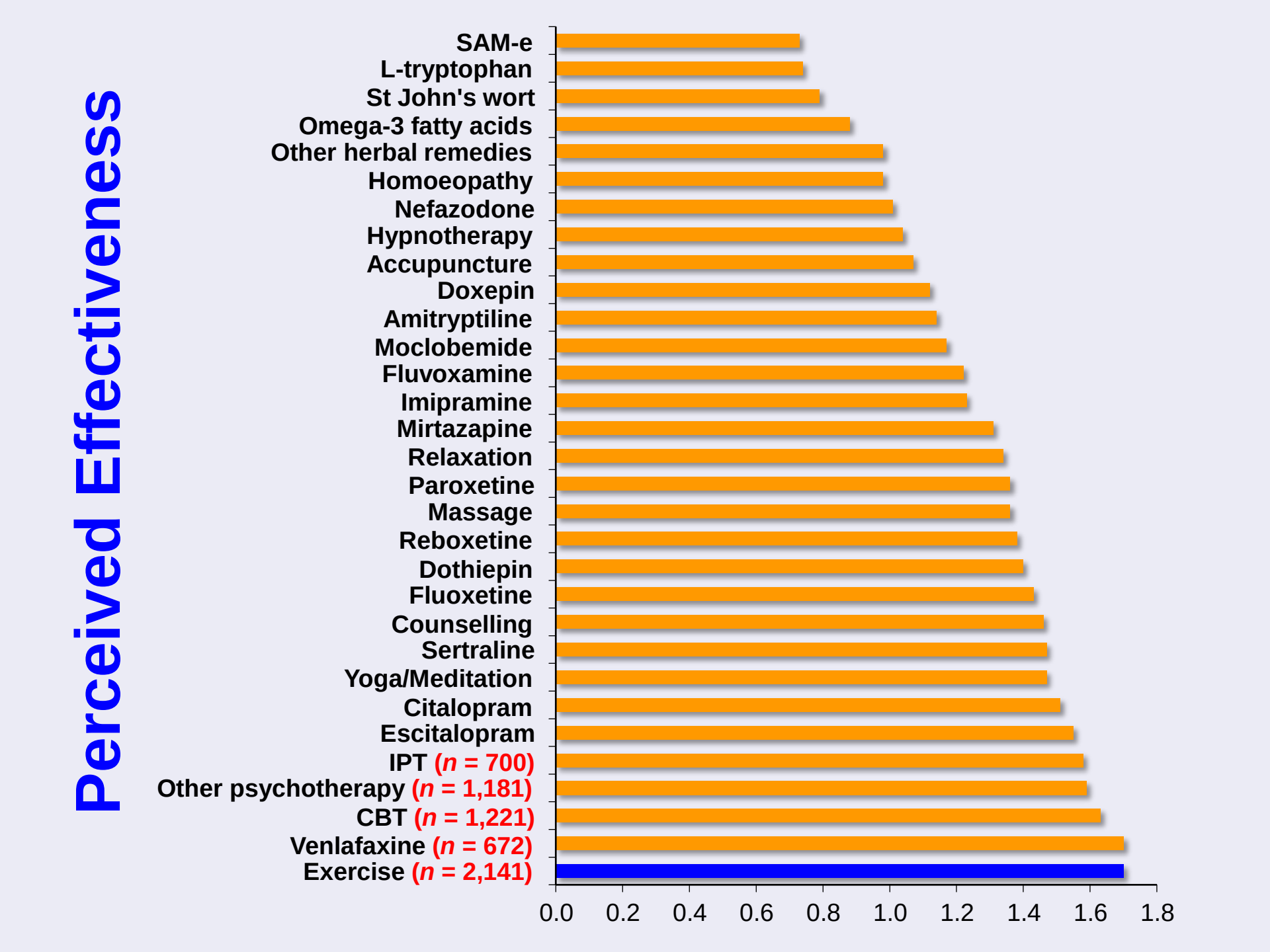
2004; Lewinsohn, 1992). The feelings of low self-esteem, helplessness, and hopelessness, added to physical inactivity and withdrawal from interacting with others, indeed make the adoption and maintenance of exercise in the depressed patient especially difficult. Consequently, the

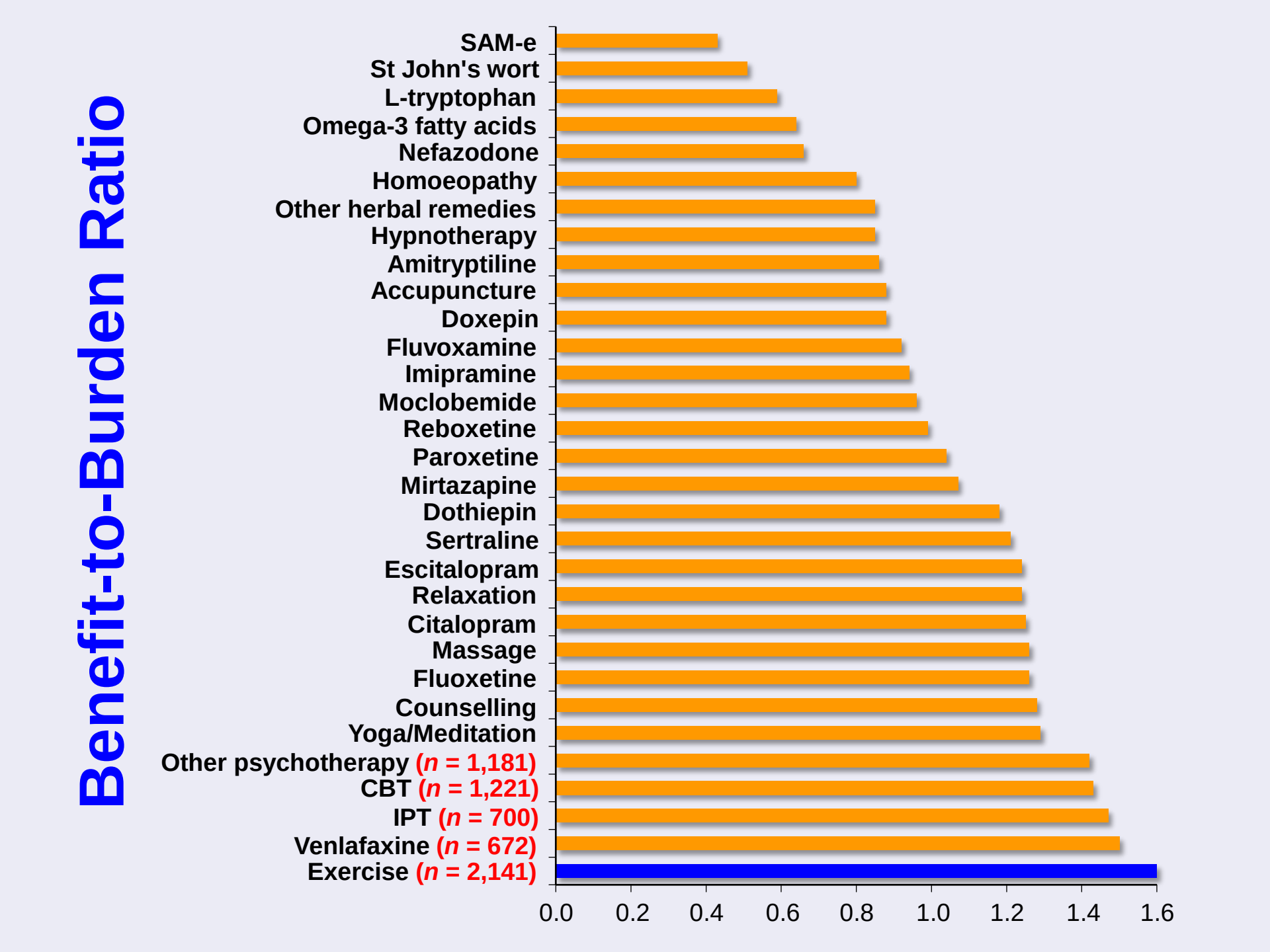
Australian and New Zealand Journal of Psychiatry 2007; 41:32–37

Judged effectiveness of differing antidepressant strategies by those with clinical depression

Gordon Parker, Joanna Crawford

Survey of 2,692 respondents with a clinically diagnosed depressive episode


Perceived Effectiveness
SAM-e
L-tryptophan
St John's wort
Omega-3 fatty acids
Other herbal remedies
Homoeopathy
Nefazodone
Hypnotherapy
Accupuncture
Doxepin
Amitryptiline
Moclobemide
Fluvoxamine
Imipramine
Mirtazapine
Relaxation
Paroxetine
Massage
Reboxetine
Dothiepin
Fluoxetine
Counselling
Sertraline
Yoga/Meditation
Citalopram
Escitalopram
IPT (n = 700)
Other psychotherapy (n = 1,181)
CBT (n = 1,221)
Venlafaxine (n = 672)
Exercise (n = 2,141)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8


Benefit-to-Burden Ratio
SAM-e
St John's wort
L-tryptophan
Omega-3 fatty acids
Nefazodone
Homoeopathy
Other herbal remedies
Hypnotherapy
Amitryptiline
Accupuncture
Doxepin
Fluvoxamine
Imipramine
Moclobemide
Reboxetine
Paroxetine
Mirtazapine
Dothiepin
Sertraline
Escitalopram
Relaxation
Citalopram
Massage
Fluoxetine
Counselling
Yoga/Meditation
Other psychotherapy (n = 1,181)
CBT (n = 1,221)
IPT (n = 700)
Venlafaxine (n = 672)
Exercise (n = 2,141)
0.0
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0.8
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1.2
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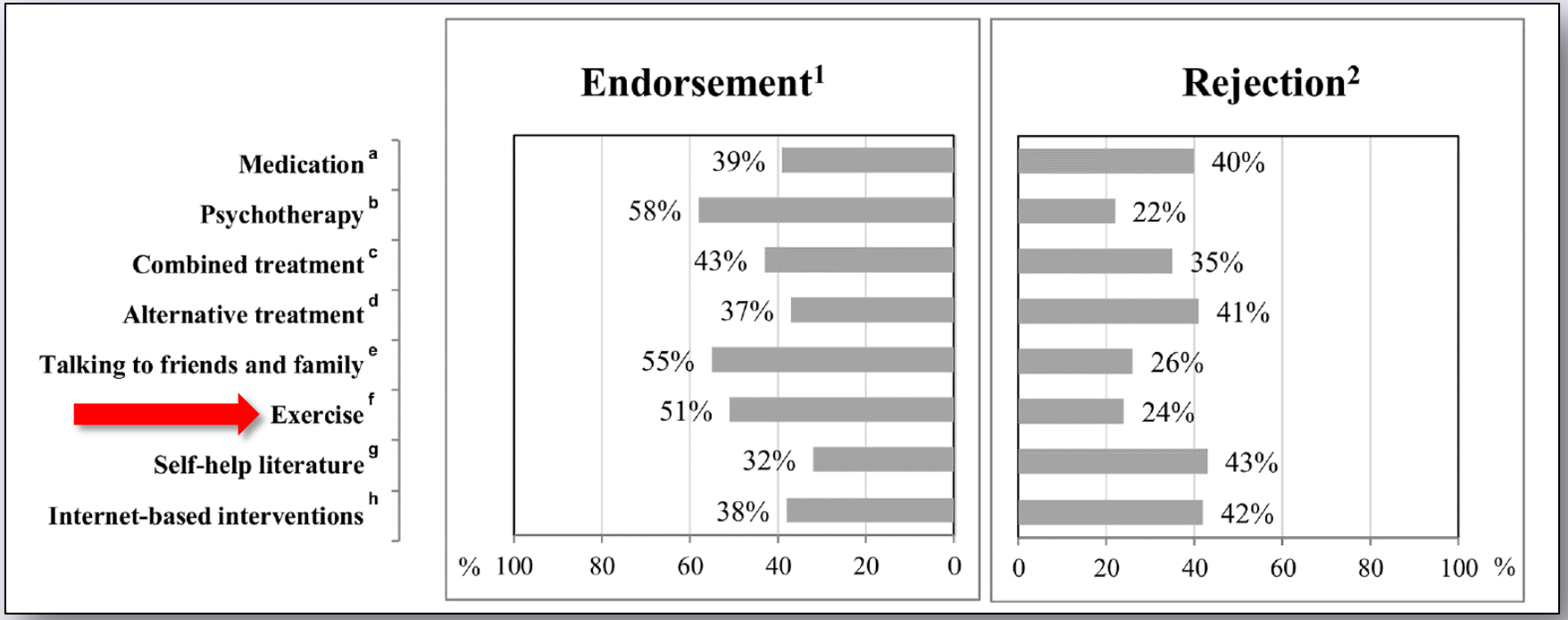
Front. Psychiatry 9:181. (2018)

Preferences for Depression Treatment Including Internet-Based Interventions: Results From a Large Sample of Primary Care Patients

Marie Dorow, Margrit Löbner, Alexander Pabst, Janine Stein and Steffi G. Riedel-Heller*

***N* = 641 primary care patients with mild to moderate depression**

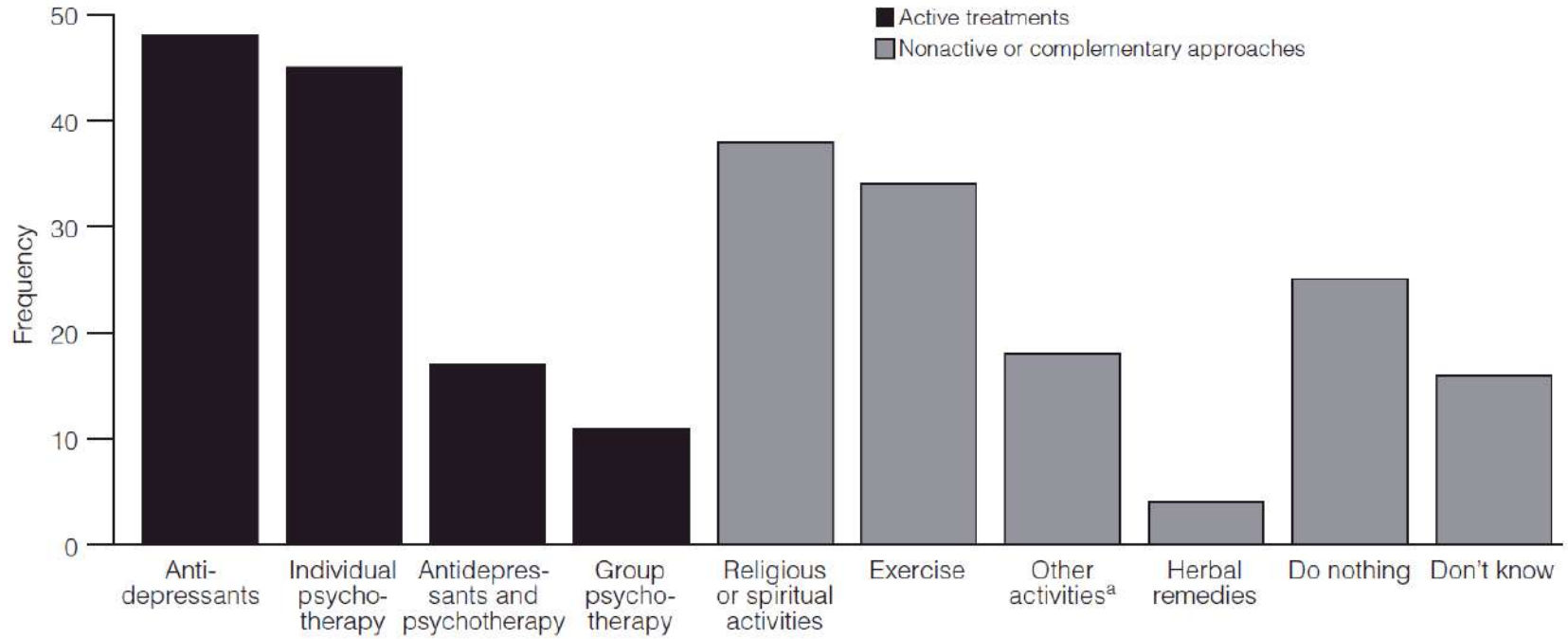


Psychiatric Services 62:532–537, 2011

Preferences for Depression Treatment Among Elderly Home Health Care Patients

Patrick J. Raue, Ph.D.
Mark I. Weinberger, Ph.D., M.P.H.
Jo Anne Sirey, Ph.D.
Barnett S. Meyers, M.D.
Martha L. Bruce, Ph.D., M.P.H.

First-choice depression treatment options of 256 elderly home care patients

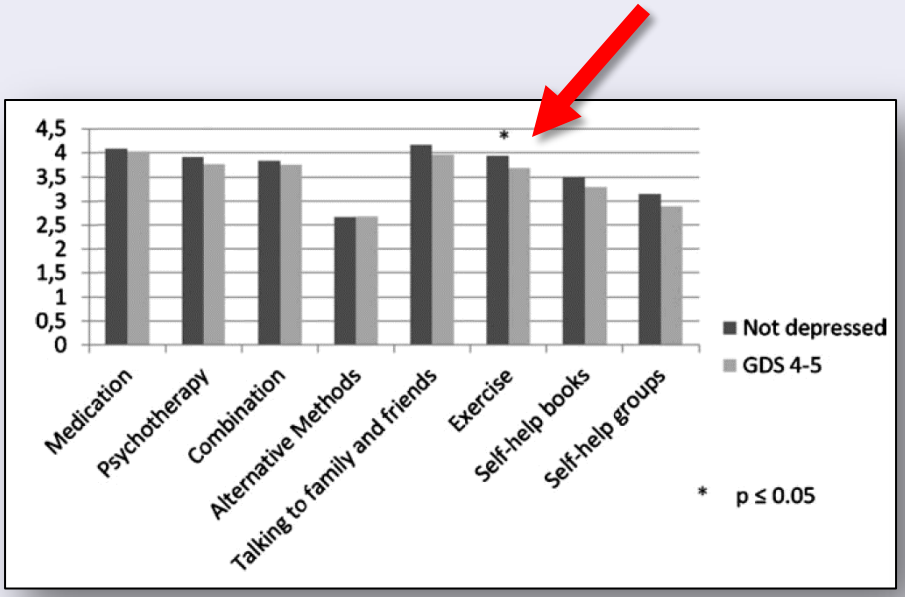


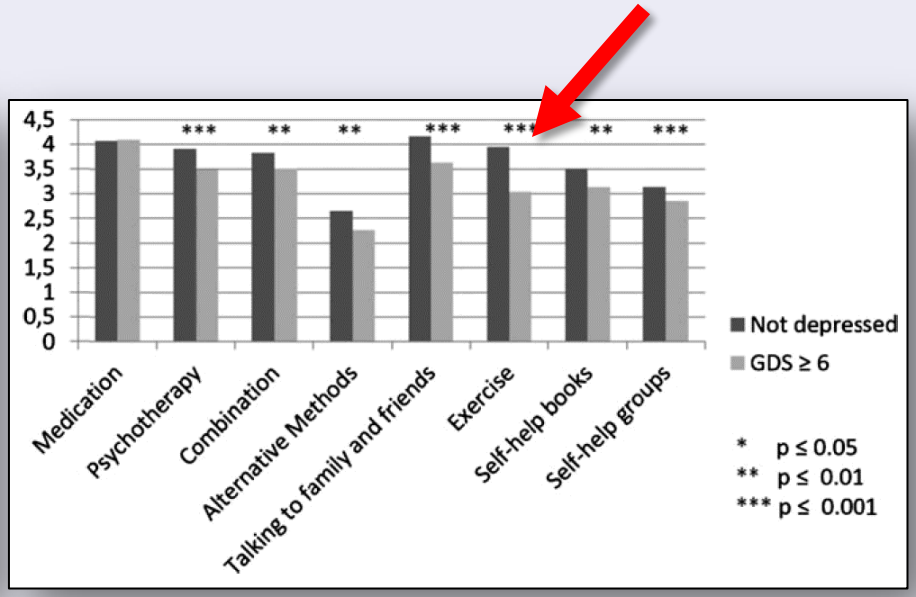
[a] For example, talk with friends, deal with on own, meditation, or alcohol use

International Psychogeriatrics 29, Issue 3 March 2017 , pp. 389-398

Treatment preferences for depression in the elderly

Claudia Luck-Sikorski,[1,2] Janine Stein,[1] Katharina Heilmann,[3] Wolfgang Maier,[3] Hanna Kaduszkiewicz,[4] Martin Scherer,[5] Siegfried Weyerer,[6] Jochen Werle,[6] Birgitt Wiese,[7] Lilia Moor,[7] Jens-Oliver Bock,[8] Hans-Helmut König[8] and Steffi G Riedel-Heller[1]





(*N* = 1,230, 75+ years, recruited from primary-care practices in Germany)

Mental Health and Physical Activity 5 (2012) 13–19

General Practitioners' beliefs about physical activity for managing depression in primary care

Aidan Searle [a,*], Michael Calnan [b], Katrina M. Turner [a], Debbie A. Lawlor [c], John Campbell [d], Melanie Chalder [e], Glyn Lewis [e]

awareness or appraisal of an evidence base. In fact, many GPs were not aware of any evidence that would assist their clinical judgement in recommending physical activity to patients presenting with depression.

Journal of Psychopharmacology 2012 26(5) 744–750

Antidepressant drugs and the response in the placebo group: the real problem lies in our understanding of the issue

Konstantinos N Fountoulakis[1] and Hans-Jürgen Möller[2]

The data on the efficacy of exercise and other alternative therapies, are either negative or do not exist.

Journal of Psychopharmacology 2014, Vol. 28(2) 106–117

Burning issues in the meta-analysis of pharmaceutical trials for depression

Konstantinos N Fountoulakis, Myrto T Samara and Melina Siamouli

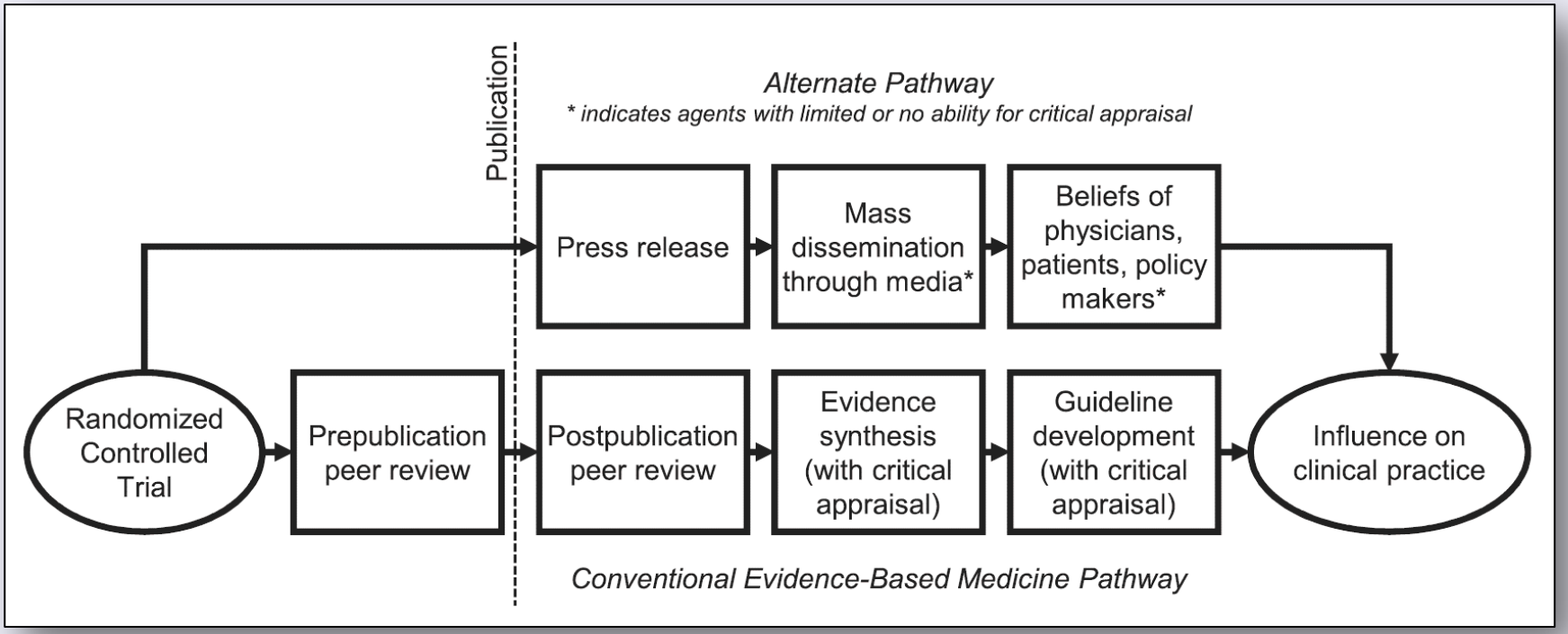
(Cuijpers et al., 2010a, 2010b) while data on the efficacy of exercise, and other alternative therapies, are either negative or do not exist at all.

JOURNAL OF SPORTS SCIENCES, 2018 VOL. 36, NO. 16, 1860–1871

Mass media representations of the evidence as a possible deterrent to recommending exercise for the treatment of depression: Lessons five years after the extraordinary case of TREAD-UK

Panteleimon Ekkekakis, Mark E. Hartman and Matthew A. Ladwig

"Press-Release-Based Medicine"

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5 June 2012 Last updated at 20:29 ET
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Exercise 'no help for depression', research suggests
By Branwen Jeffreys
Health correspondent, BBC News

Key questions: heart failure
▶ page 20

Eight months of intensive support to exercise fails to bring patients significant benefits

DEPRESSION

Exercise no help in depression

By Rhiannon Smith

A major NHS study on whether exercise can improve depression has failed to show any clinical benefit from increasing activity levels, UK researchers claim.

The NHS health technology assessment failed to show any meaningful improvements after eight months of intensive support to increase activity levels in 361 patients with depression in general practice - raising questions over current treatment guidelines.

The Treating depression with physical activity study looked at the effectiveness of employing a trained physical activity facilitator over eight months to encourage patients in Bristol and Exeter to take more exercise at three face-to-face and 10 telephone sessions, compared with usual GP care.

Rates of physical activity increased by 2.3-fold in the intervention group compared with usual care.

The intervention group did score 'very slightly' lower on the Beck Depression Inventory score at four months compared with the controls, with a non-significant difference of -0.54.

But there was no evidence of clinical benefit, reduced antidepressant use or improved quality of life in the intervention group, and the physical activity intervention was more costly than usual care - costing an average of £220 per person.

NICE guidance currently recommends that would ease their depression.

He said: 'We can be confident in concluding that our physical activity intervention does not benefit outcome in depressive illness when used as an adjunct to usual care.

'It is unlikely to be a cost-effective intervention.'

Dr David Kessler, a GP in Bris-

Chances of depression recovery

49.6% Exercise group

45.1% Usual care group

Source: *Health Technol Assess* 2012;16:1-164

NICE advises exercise schemes for mild to moderate depression

BMJ 2012;344:e3181

Exercise to treat depression

Does not seem to benefit patients in clinical settings who receive good standard care

Amanda Daley *senior lecturer in health psychology*, Kate Jolly *professor of public health*

What should doctors advise their patients who present with depression? Within a clinical setting, for patients who are well managed on usual drugs or psychological treatments (or both), advice and support to be physically active does not seem to offer additional benefit and should not be given as standard. Indeed, recommending exercise to very depressed patients may worsen any thoughts of "failure" if they are unable to comply with the recommendation. However, positive results from trials

J R Coll Physicians Edinb 2012; 42:325

Physical activity as a treatment for depressed adults

GE Mead
Professor of Stroke and Elderly Care Medicine, University of Edinburgh Edinburgh, UK

Based on the results of this clinical trial, clinicians should not advise people with depression that physical activity will increase their chances of recovering from depression.

WARWICK

News & Events

Exercise proves to be ineffective against care home depression

Researchers at the University of Warwick and Queen Mary, University of London have shown that exercise is not effective in reducing burden of depression among elderly care home residents.

Exercise is a low risk intervention that can improve mental health but the findings of a National Institute for Health Research Health Technology Assessment Programme study, published in *The Lancet*, conclude that there is a requirement for alternative approaches to reduce the burden of depression in frail, very elderly, care home residents.

http://www2.warwick.ac.uk/newsandevents/pressreleases/exercise_proves_to/

NOVEMBER 13. 2015 PM. 9.21

POLITIKEN

Common perception that exercise works against depression, is wrong.

For years, doctors and other professionals advised people suffering from depression to exercise. A simple Google search on the words 'exercise' and 'depression' also leads to the countless repetitions of the mantra that physical exercise helps to make depressed healthy.

But it is not true.

Dr Jesper Krogh

http://politiken.dk/forbrugogliv/sundhedogmotion/sygdom/art5598984/Ny-forskning-Motion-hj%C3%A6lper-ikke-spor-p%C3%A5-depression

So, what should the path forward be?

1. Antidepressants are not going anywhere, so exercise should be promoted as (a) augmentation therapy and (b) a “stop-gap” measure.
2. Anti-exercise bias in the research literature and the press is only just beginning, and should be met with an organized, rapid, and relentless response.

British Journal of Psychiatry (2015) 207, 235–242

Physical exercise for late-life major depression

M. Belvederi Murri, M. Amore, M. Menchetti, G. Toni, F. Neviani, M. Cerri, M. B. L. Rocchi, D. Zocchi, L. Bagnoli, E. Tam, A. Buffa, S. Ferrara, M. Neri, G. S. Alexopoulos, S. Zanetidou and the Safety and Efficacy of Exercise for Depression in Seniors (SEEDS) Study Group

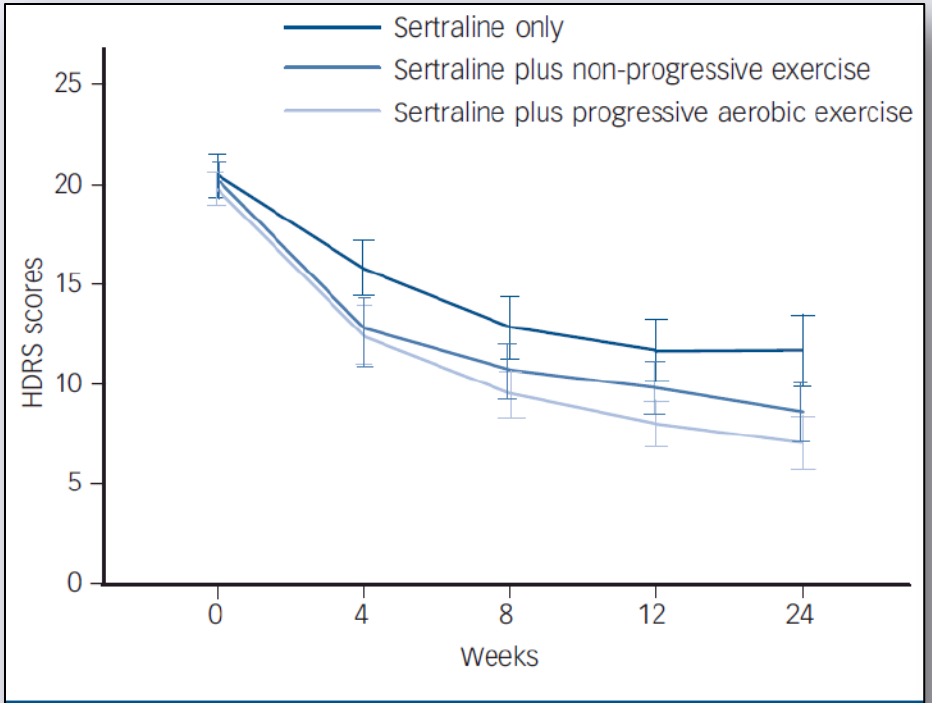


Fig. 3 Unadjusted mean scores (with 95% confidence intervals) on the Hamilton Rating Scale for Depression (HRSD) over time.

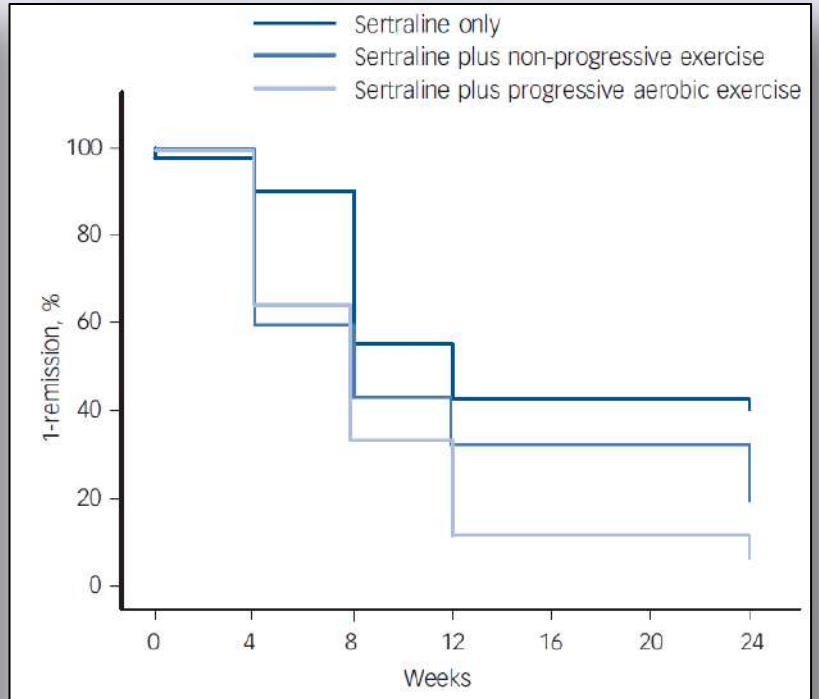


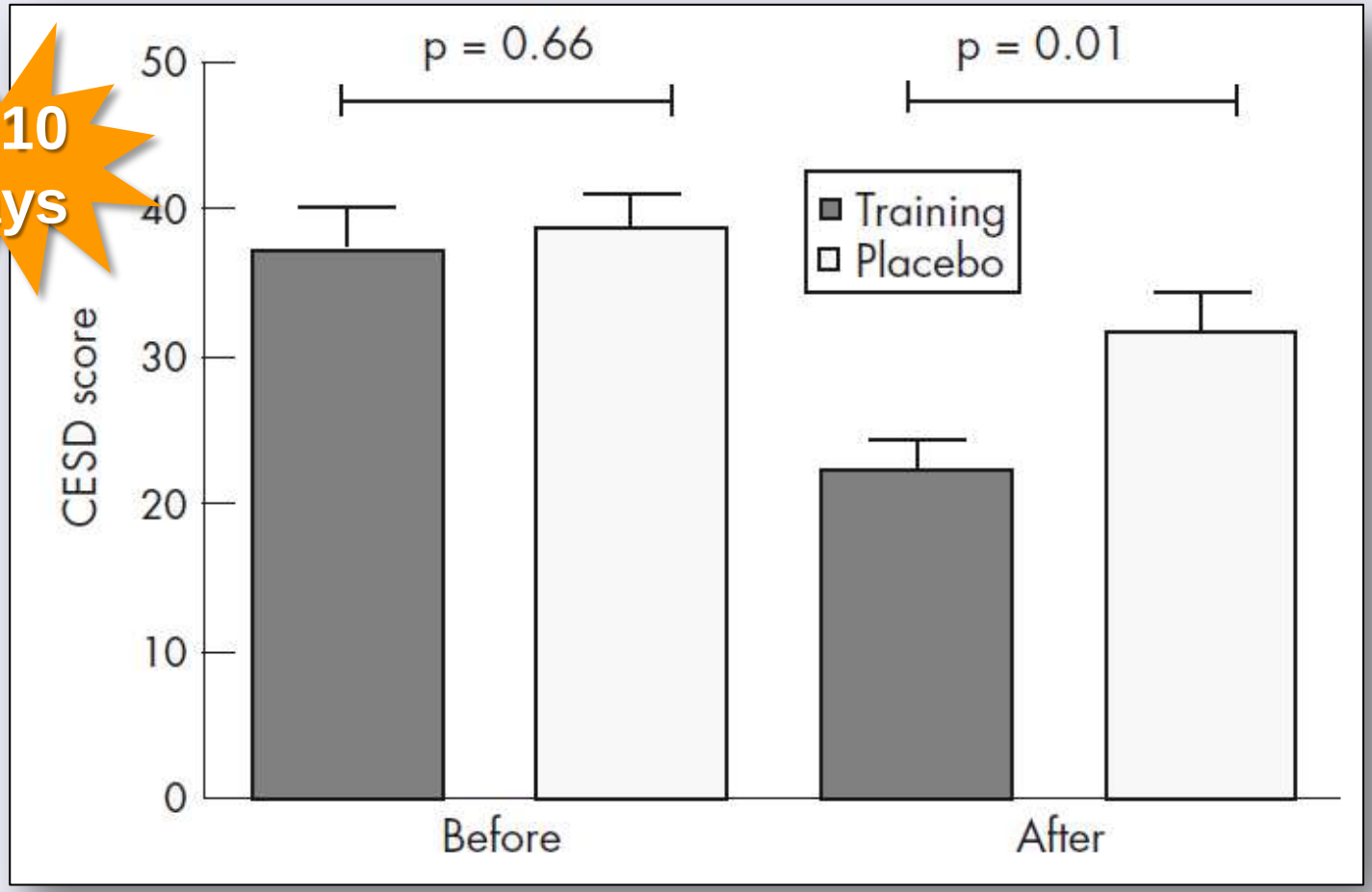
Fig. 2 Kaplan–Meier survival curves for remission of depression according to intervention group.

Br J Sports Med 2007;41:29–33

A randomised, controlled study on the effects of a short-term endurance training programme in patients with major depression

K Knubben, F M Reischies, M Adli, P Schlattmann, M Bauer, F Dimeo

In 10 days

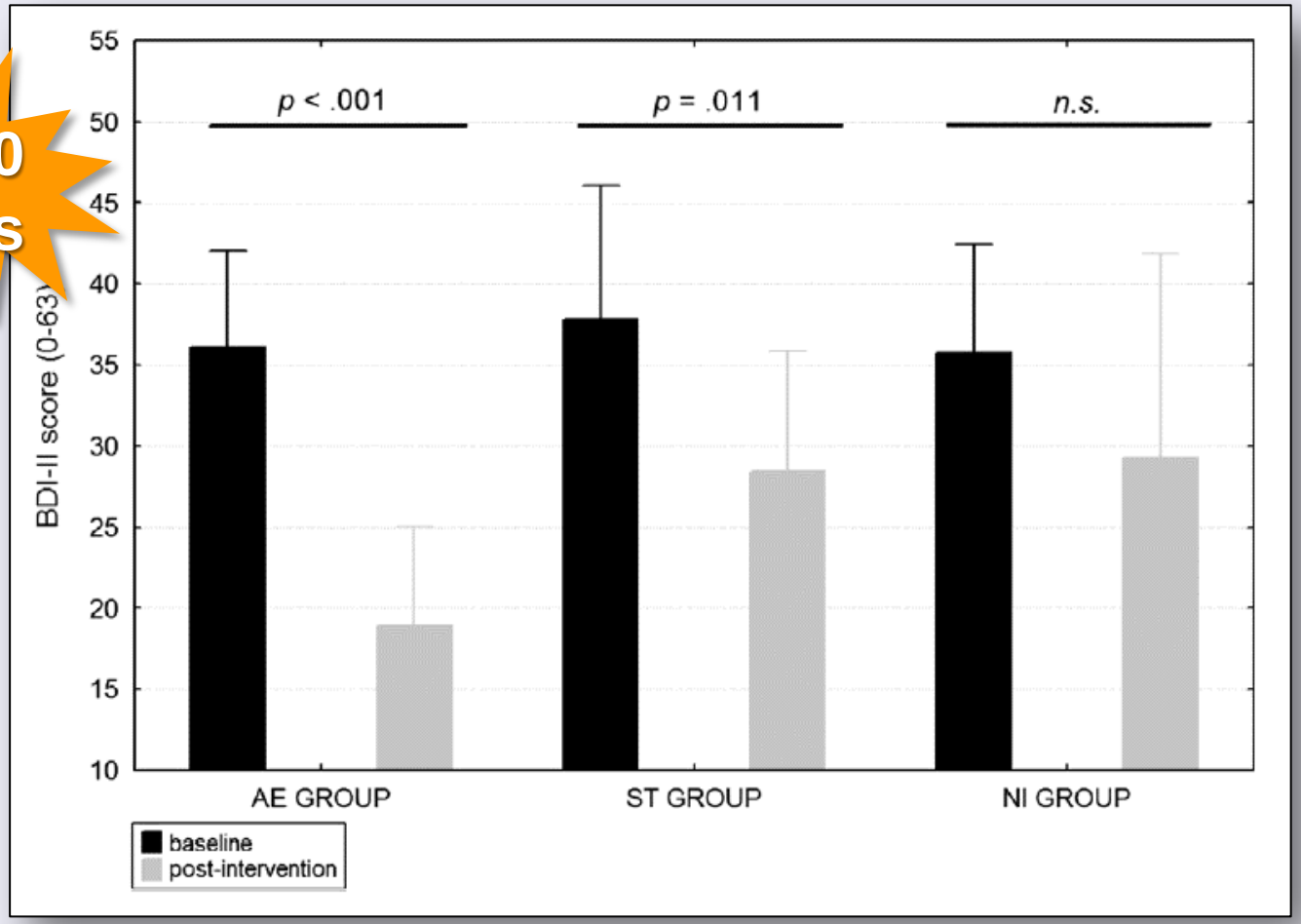


Journal of Affective Disorders 191 (2016) 139–144

Efficacy of exercise as an adjunct treatment for clinically depressed inpatients during the initial stages of antidepressant pharmacotherapy: An open randomized controlled trial

Fabien D. Legrand [a,*], Elise M. Neff [b]

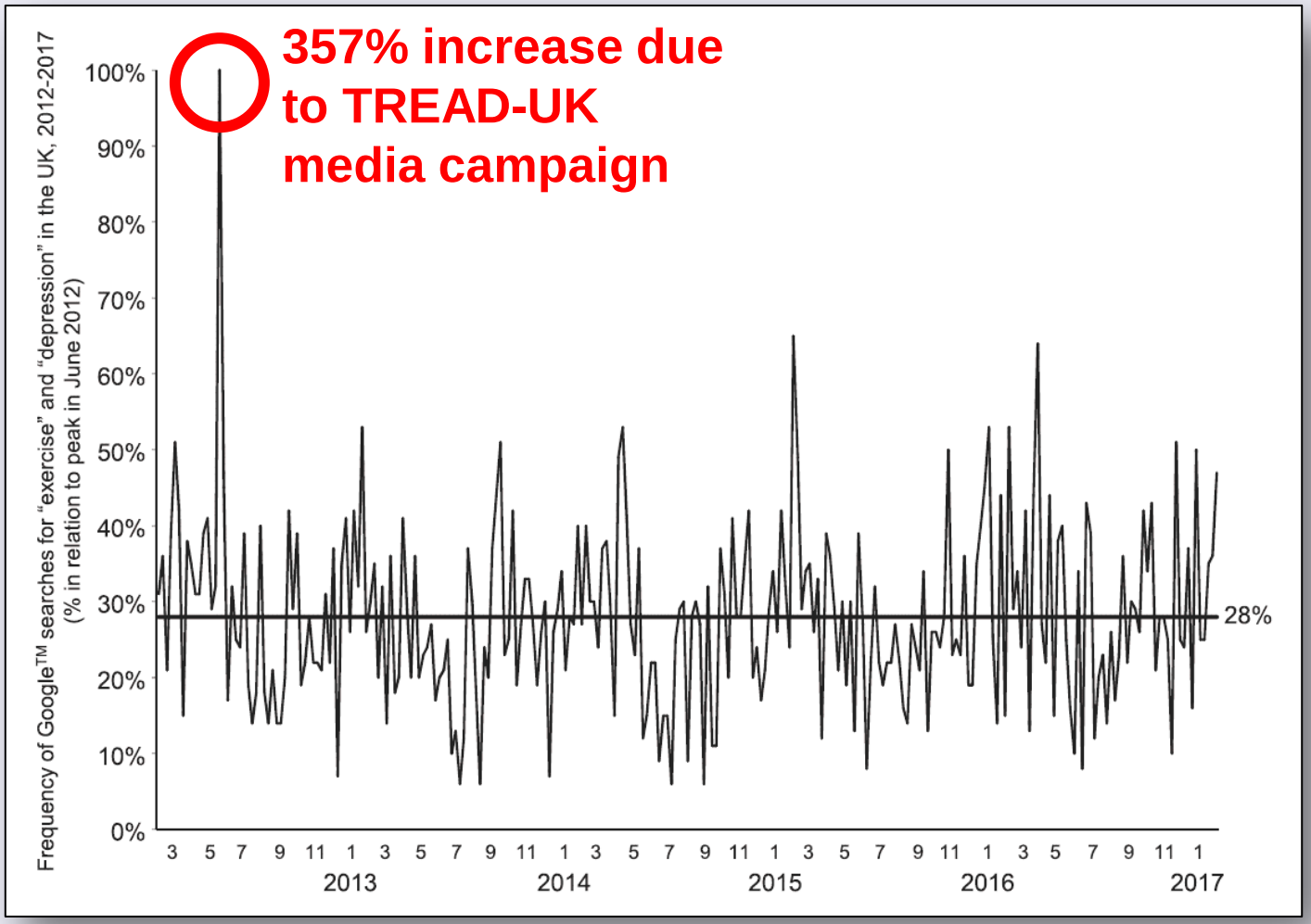
In 10 days



JOURNAL OF SPORTS SCIENCES, 2018 VOL. 36, NO. 16, 1860–1871

Mass media representations of the evidence as a possible deterrent to recommending exercise for the treatment of depression: Lessons five years after the extraordinary case of TREAD-UK

Panteleimon Ekkekakis, Mark E. Hartman and Matthew A. Ladwig



Jennifer Trueland reports on the fallout from media coverage of rese
claiming that physical exercise does not benefit patients with depres

EXERCISE CAUTION

When practice nurse Gillian Bonar heard a news item that suggested exercise did not help treat depression, she felt her heart sink. 'It goes against everything we do and I knew it could make my job harder,' she says.

'You know you are going to get patients saying "This is rubbish. I'm not going to do it," because they have heard the story too.'

The research on exercise was published on BMJ.com on June 6. Conducted in GP practices in Exeter and Bristol, it compared outcomes of two sets of people diagnosed with depression: one group undertook physical activity in addition to care they would usually receive, the other received the usual care only (see box).

The study found that those who exercised did not fare any better in terms of depressive symptoms or use of antidepressants than the group receiving standard care.

There have been many complaints about the media coverage, for example the BBC Online headline 'Exercise "no help for depression", research suggests'. But the study's authors, mostly from the universities of Bristol and Exeter and Peninsula

SUMMARY

A recent study into the effects of structured physical exercise for people diagnosed with depression claimed that it did not help. The findings attracted huge media coverage that may have made it harder to persuade patients with depression to take exercise.

Author
Jennifer Trueland is a freelance journalist

of Medicine and Den
in Plymouth, make t
clearly: 'Clinicians a
makers should alert
depression that advic
physical activity will
chances of recovery.'

The study has inap
number of 'rapid res
an academic paper –
time of writing and
negative. The researc
media reporting, has
debate on patients' fe
mental health charit

Motivational advic

So are the nurses wh
patients to take up e
wasting their time? A
should they do if pat
Ms Bonar fears – dis
idea of taking physic

'I would be disapp
health professionals
by what they read in
says Ian Hulatt, RCN
health adviser. 'But if
sad and upset, and d
to take exercise, then
us as healthcare prof
to talk to them about
energise themselves,
care of themselves. It
talking to them to fin
is important to them,
motivates them, and
with them to capture
on that motivation.'

The study involved
randomising people
where some received
treatment and others
plus a physical exerci
programme. Mr Hul

When practice nurse Gillian Bonar heard a news item that suggested exercise did not help treat depression, she felt her heart sink. 'It goes against everything we do and I knew it could make my job harder,' she says.

'You know you are going to get patients saying "This is rubbish. I'm not going to do it," because they have heard the story too.'

Thank you!


http://Ekkekakis.org


@Ekkekakis