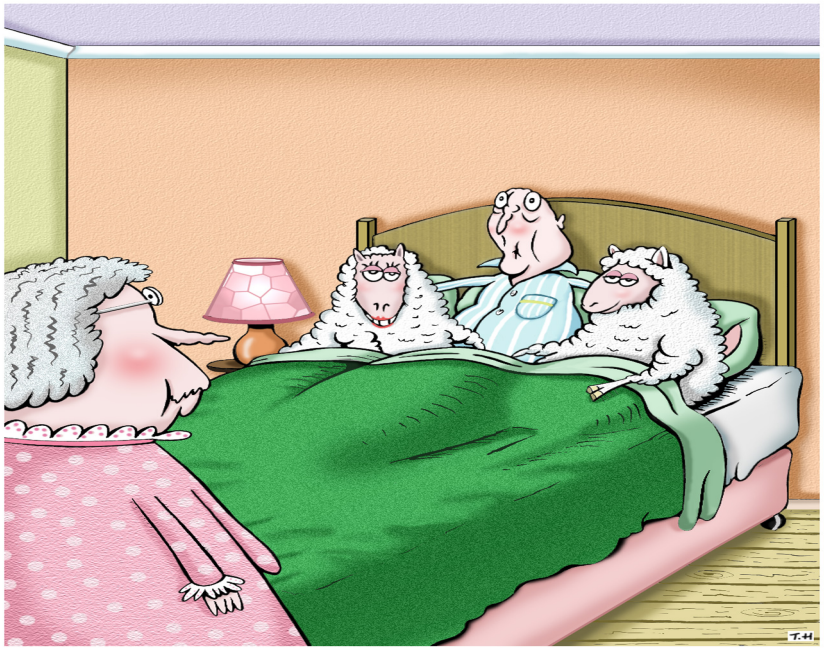
# CBT Treatment of Insomnia (CBT-I): Where are we?



"It's not what it looks like Laura, I just couldn't sleep."

Jason Ellis
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# Starting at the end….
# CBT-I is:

- Good efficacy and comparative effectiveness to pharmacotherapy
- Effective with complex cases as with ‘pure’ cases
- Confers benefits above and beyond ‘sleep’

# Starting at the end….
# CBT-I is:

- Good efficacy and comparative effectiveness to pharmacotherapy

- Effective with complex cases as with ‘pure’ cases

| Author | Year | Title | Journal |
|---|---|---|---|
| Morin et al. | 1994 | Nonpharmacological interventions for insom-nia: a meta-analysis of treatment efficacy | Am J Psychiatry, 151, 1172-1180 |
| Murtagh & Greenwood | 1995 | Identifying effective psychological treatments for insomnia: a meta-analysis | J Consult Clin Psychol, 1995, 79-89 |
| Pallesen et al. | 1998 | Nonpharmacological interventions for insom-nia in older adults: a meta-analysis of treat-ment efficacy | Psychotherapy, 35, 472-481 |
| Montgomery & Dennis | 2003 | Cognitive behavioral interventions for sleep problems in adults aged 60+ | Cochrane Library, 1, 1-39/ Sleep Med Rev,8, 47-62 |
| Irwin et al. | 2006 | Comparative meta-analysis of behaviroral interventions for insomnia and their efficacy in middle-aged adults and in older adults 55+ years of age | Health Psychology, 25,3-14. |
| Okajima et al. | 2011 | A meta-analysis on the treatment effective-ness of cognitive behavioral therapy for primary insomnia | Sleep & Biol Rhythms, 9,24-34 |
| Mitchell et al | 2012 | Comparative effectiveness of cognitive behavioral therapy for insomnia: a systematic review | BMC Family Practice, 13, 40-51 |
| Cheng & Dizon | 2012 | Computerised cognitive behavioural therapy for insomnia: a systematic review and meta-analysis | Psychotherapy and Psychosomatics, 81, 206-216 |
| Koffel et al. | 2015 | A meta-analysis of group cognitive behavioral therapy for insomnia | Sleep Med Rev, 19 epub |
| Wu et al. | 2015 | Cognitive behavioral therapy for insomnia comorbid with psychiatric and medical conditions | JAMA intern Med; epub |
| Trauer et al. | 2015 | Cognitive behavioral therapy for chronic insomnia | Annals of Internal Medicine; epub |
| Geiger-Brown et al. | 2015 | Cognitive behavioral therapy in persons with comorbid insomnia: A meta-analysis | Sleep Med Rev, 23, 54-67 |

# Is CBT-I Effective in Co-morbid populations…?

J Clin Psychol Med Settings (2012) 19:224–234
DOI 10.1007/s10880-011-9275-y

Cognitive-Behavioral T
with Hearing Impairme

Markus Jansson-Fröjmark · Steven J
Ida K. Flink · Sarah Granberg · Bert
Annika Norell-Clarke

Cognitive-E
Abnormalit

*Nicole K. Y. Tang, D*

Psycho-Oncology

Journal of Consulting and Clinical Psychology
2015, Vol. 83, No. 3, 564–577

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0022-006X/15/$12.00 http://dx.doi.org/10.1037/a0038655

## Treating Insomnia Improves Mood State, Sleep, and Functioning in Bipolar Disorder: A Pilot Randomized Controlled Trial


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University of California, Berkeley

Descartes Li
University of California, San Francisco

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Terence A. Ketter
Stanford University

Thomas C. Neylan
University of California, San Francisco

Daniel J. Buysse
University of Pittsburgh



***Objective:*** To determine if a treatment for interepisode bipolar disorder I patients with insomnia improves mood state, sleep, and functioning. ***Method:*** Alongside psychiatric care, interepisode bipolar disorder I participants with insomnia were randomly allocated to a bipolar disorder–specific modification of cognitive behavior therapy for insomnia (CBTI-BP; $n = 30$) or psychoeducation (PE; $n = 28$) as a comparison condition. Outcomes were assessed at baseline, the end of 8 sessions of treatment, and 6 months later. This pilot was conducted to determine initial feasibility and generate effect size estimates. ***Results:*** During the 6-month follow-up, the CBTI-BP group had fewer days in a bipolar episode relative to the PE group (3.3 days vs. 25.5 days). The CBTI-BP group also experienced a significantly lower hypomania/mania relapse rate (4.6% vs. 31.6%) and a marginally lower overall mood episode relapse rate (13.6% vs. 42.1%) compared with the PE group. Relative to PE, CBTI-BP reduced insomnia severity and led to higher rates of insomnia remission at posttreatment and marginally higher rates at 6 months. Both CBTI-BP and PE showed statistically significant improvement on selected sleep and functional impairment measures. The effects of treatment were well sustained through follow-up for most outcomes, although some decline on secondary sleep benefits was observed. ***Conclusions:*** CBTI-BP was associated with reduced risk of mood episode relapse and improved sleep and functioning on certain outcomes in bipolar disorder. Hence, sleep disturbance appears to be an important pathway contributing to bipolar disorder. The need to develop bipolar disorder–specific sleep diary scoring standards is highlighted.


NEW RESEARCH

CBT for Insomni
Symptom Sev

Rachel Manber, Ph.D.[1]; Rebecc

[1]Stanford University Schc
[2]Rush Univer

**TREATMENT OPTION**
**ALCOHOL RECOVERY**


**J. Todd Arnedt, Ph.D.**[1], **Deirdre A. Conroy, Ph.D.**[2], and **Kirk J. Brower, M.D., FASAM**[2]

[1]Sleep and Chronophysiology Laboratory, Department of Psychiatry, University of Michigan, Ann Arbor, MI

[2]University of Michigan Addiction Treatment Services (UMATS), Department of Psychiatry, University of Michigan, Ann Arbor, MI


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Camahan and Lora D. Baum
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, Ph.D.[4]

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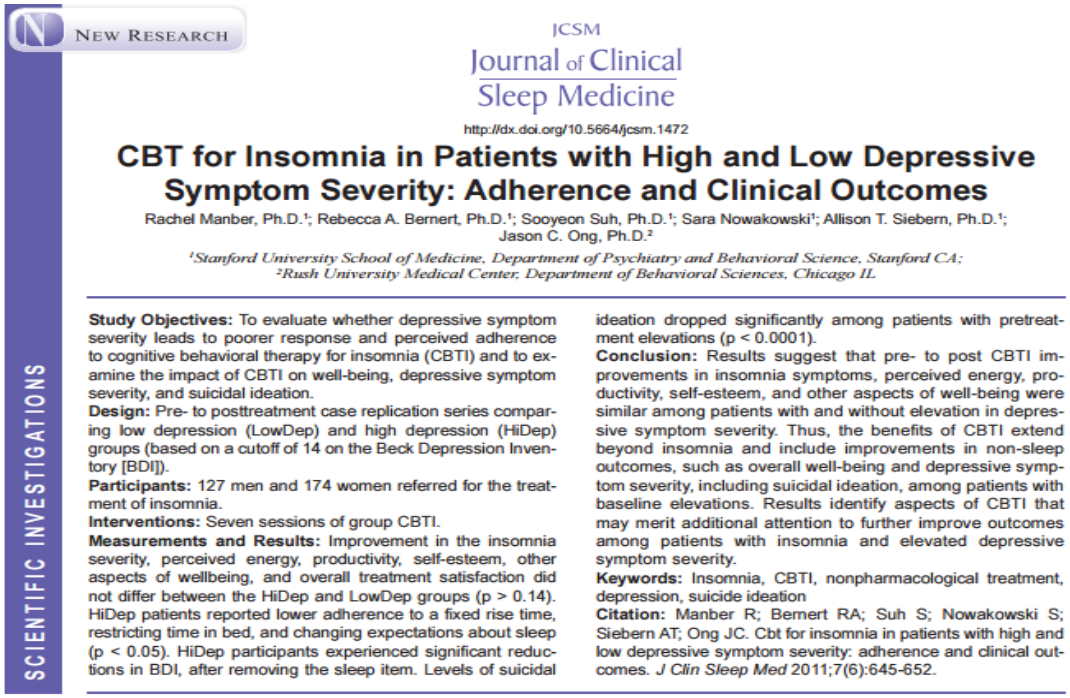
ORIGINAL RESEARCH

Cognitive behavioral therapy for insomnia comorbid with COPD is feasible with preliminary evidence of positive sleep and fatigue effects


This article was published in the following Dove Press journal:
International Journal of COPD
23 November 2011
Number of times this article has been viewed

# Starting at the end….
# CBT-I is:

- Confers benefits above and beyond ‘sleep’



NEW RESEARCH

SCIENTIFIC INVESTIGATIONS

JCSM
Journal of Clinical Sleep Medicine
http://dx.doi.org/10.5664/jcsm.1472

## CBT for Insomnia in Patients with High and Low Depressive Symptom Severity: Adherence and Clinical Outcomes

Rachel Manber, Ph.D.[1]; Rebecca A. Bernert, Ph.D.[1]; Sooyeon Suh, Ph.D.[1]; Sara Nowakowski[1]; Allison T. Siebern, Ph.D.[1]; Jason C. Ong, Ph.D.[2]

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[2]*Rush University Medical Center, Department of Behavioral Sciences, Chicago IL*

**Study Objectives:** To evaluate whether depressive symptom severity leads to poorer response and perceived adherence to cognitive behavioral therapy for insomnia (CBTI) and to examine the impact of CBTI on well-being, depressive symptom severity, and suicidal ideation.
**Design:** Pre- to posttreatment case replication series comparing low depression (LowDep) and high depression (HiDep) groups (based on a cutoff of 14 on the Beck Depression Inventory [BDI]).
**Participants:** 127 men and 174 women referred for the treatment of insomnia.
**Interventions:** Seven sessions of group CBTI.
**Measurements and Results:** Improvement in the insomnia severity, perceived energy, productivity, self-esteem, other aspects of wellbeing, and overall treatment satisfaction did not differ between the HiDep and LowDep groups ($p > 0.14$). HiDep patients reported lower adherence to a fixed rise time, restricting time in bed, and changing expectations about sleep ($p < 0.05$). HiDep participants experienced significant reductions in BDI, after removing the sleep item. Levels of suicidal ideation dropped significantly among patients with pretreatment elevations ($p < 0.0001$).
**Conclusion:** Results suggest that pre- to post CBTI improvements in insomnia symptoms, perceived energy, productivity, self-esteem, and other aspects of well-being were similar among patients with and without elevation in depressive symptom severity. Thus, the benefits of CBTI extend beyond insomnia and include improvements in non-sleep outcomes, such as overall well-being and depressive symptom severity, including suicidal ideation, among patients with baseline elevations. Results identify aspects of CBTI that may merit additional attention to further improve outcomes among patients with insomnia and elevated depressive symptom severity.
**Keywords:** Insomnia, CBTI, nonpharmacological treatment, depression, suicide ideation
**Citation:** Manber R; Bernert RA; Suh S; Nowakowski S; Siebern AT; Ong JC. Cbt for insomnia in patients with high and low depressive symptom severity: adherence and clinical outcomes. *J Clin Sleep Med* 2011;7(6):645-652.

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# So what's the problem….?
# CBT-I is:

- Hampered by very few clinicians
- Prone to high levels of attrition and non-adherence
- Perceived as time and labour intensive

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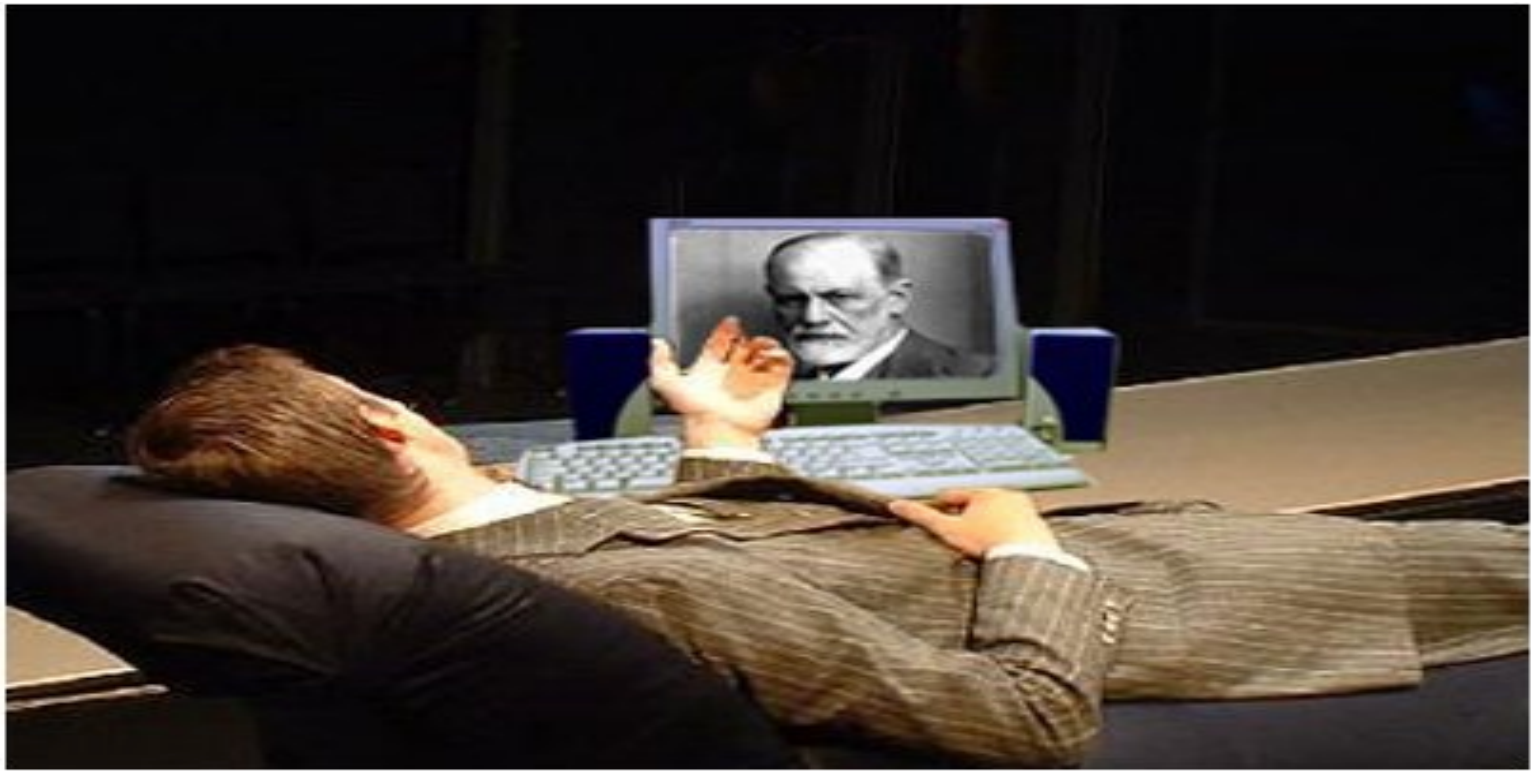

# So what's the problem….?
# CBT-I is:

- Prone to high levels of attrition and non-adherence

  Predictors of attrition/non adherence:

  - More dysfunctional beliefs – Cvengros et al, 2015
  - Less severe symptoms – Matthews et al, 2012, Yeung et al, 2015
  - Higher levels of depression – Manber et al, 2011, Yeung et al, 2015
  - Short sleep duration – Ong et al, 2008

# New Approaches to Address Attrition in CBT-I?

INSOMNIA

The Effects of Modafinil and Cognitive Behavior Therapy on Sleep Continuity in Patients with Primary Insomnia

ORIGINAL CONTRIBUTION

Behav
for La
A Rand

Charles M. Mo
Cheryl Colecch
Jackie Stone, P
Rakesh Sood, M
Douglas Brink,

See also p 10

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DOI: 10.1080/15402002.2013.838768

Routledge
Taylor & Francis Group

The Role of Perceived Partner Alliance on the Efficacy of CBT-I: Preliminary Findings from the Partner Alliance in Insomnia Research Study (PAIRS)

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*Northumbria Centre for Sleep Research*
*Northumbria University*

Wendy M. Troxel
*Health Division*
*RAND Corporation, Pittsburgh*

Despite cognitive behavioral therapy for insomnia (CBT-I) being effective, barriers to adherence have been documented. Perceived partner alliance has been shown to influence adherence and treatment outcome across a range of other health conditions. The present study examined patients' perceptions regarding the role of their partner in CBT-I and the impact of perceived partner alliance on treatment outcome. Twenty-one patients were interviewed, following CBT-I, to examine the areas where partners were thought to influence the process of CBT-I. The majority of statements made during interviews explicitly mentioned a partner's influence (65%). Additionally, the production of more positive partner statements was associated with better treatment outcome (using the Insomnia Severity Index). The integration of perceived partner alliance into CBT-I is discussed.

INTRODUCTION

Despite considerable evidence of the effectiveness and clinical efficacy of cognitive behavioural therapy for insomnia (CBT-I), a lack of qualified providers (Manber et al., 2012) and poor adherence, particularly for its behavioral components (Perlis et al., 2004; Riedel & Lichstein, 2001; Sexton-Radek & Overton, 1996), are significant barriers to its widespread uptake. Where developments such as Computerized CBT-I (CCBTI) have begun to address the shortfall

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1

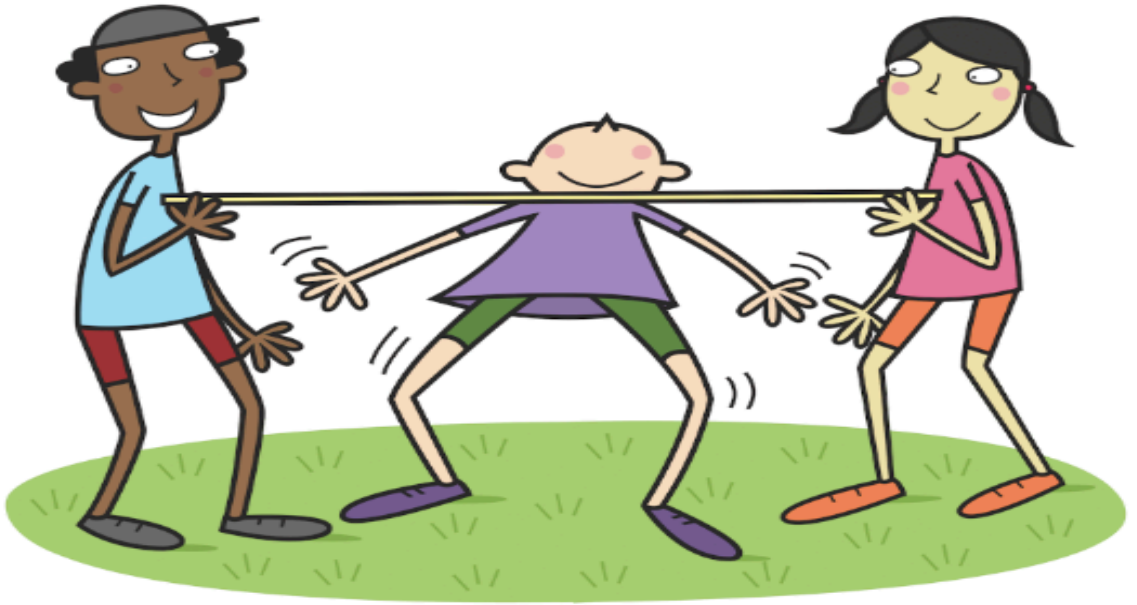
Combining CBT-I with a stimulant

Combining CBT-I with a hypnotic

Including partners in CBT-I

# So what's the problem….?
# CBT-I is:

- Perceived as time and labour intensive



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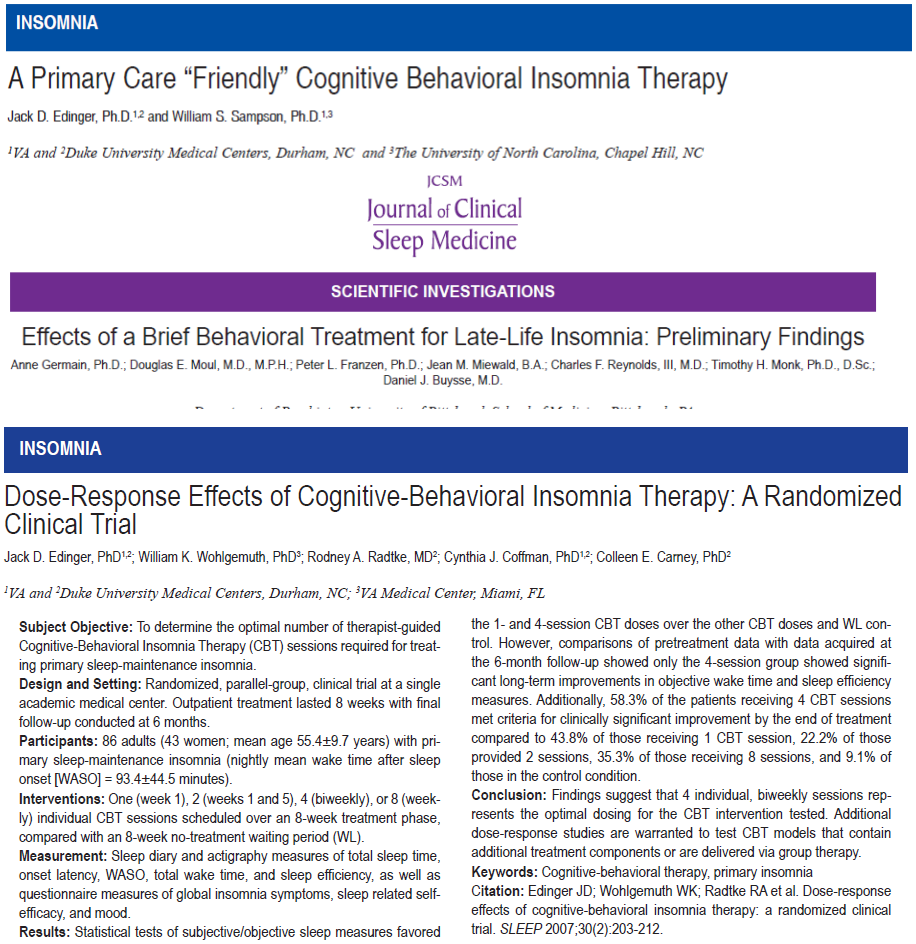
# What Do Brief Interventions Look Like?



INSOMNIA

A Primary Care "Friendly" Cognitive Behavioral Insomnia Therapy

Jack D. Edinger, Ph.D.[1,2] and William S. Sampson, Ph.D.[1,3]

*[1]VA and [2]Duke University Medical Centers, Durham, NC and [3]The University of North Carolina, Chapel Hill, NC*

JCSM
Journal of Clinical Sleep Medicine

SCIENTIFIC INVESTIGATIONS

Effects of a Brief Behavioral Treatment for Late-Life Insomnia: Preliminary Findings

Anne Germain, Ph.D.; Douglas E. Moul, M.D., M.P.H.; Peter L. Franzen, Ph.D.; Jean M. Miewald, B.A.; Charles F. Reynolds, III, M.D.; Timothy H. Monk, Ph.D., D.Sc.; Daniel J. Buysse, M.D.

INSOMNIA

Dose-Response Effects of Cognitive-Behavioral Insomnia Therapy: A Randomized Clinical Trial

Jack D. Edinger, PhD[1,2]; William K. Wohlgemuth, PhD[3]; Rodney A. Radtke, MD[2]; Cynthia J. Coffman, PhD[1,2]; Colleen E. Carney, PhD[2]

*[1]VA and [2]Duke University Medical Centers, Durham, NC; [3]VA Medical Center, Miami, FL*

**Subject Objective:** To determine the optimal number of therapist-guided Cognitive-Behavioral Insomnia Therapy (CBT) sessions required for treating primary sleep-maintenance insomnia.
**Design and Setting:** Randomized, parallel-group, clinical trial at a single academic medical center. Outpatient treatment lasted 8 weeks with final follow-up conducted at 6 months.
**Participants:** 86 adults (43 women; mean age 55.4±9.7 years) with primary sleep-maintenance insomnia (nightly mean wake time after sleep onset [WASO] = 93.4±44.5 minutes).
**Interventions:** One (week 1), 2 (weeks 1 and 5), 4 (biweekly), or 8 (weekly) individual CBT sessions scheduled over an 8-week treatment phase, compared with an 8-week no-treatment waiting period (WL).
**Measurement:** Sleep diary and actigraphy measures of total sleep time, onset latency, WASO, total wake time, and sleep efficiency, as well as questionnaire measures of global insomnia symptoms, sleep related self-efficacy, and mood.
**Results:** Statistical tests of subjective/objective sleep measures favored the 1- and 4-session CBT doses over the other CBT doses and WL control. However, comparisons of pretreatment data with data acquired at the 6-month follow-up showed only the 4-session group showed significant long-term improvements in objective wake time and sleep efficiency measures. Additionally, 58.3% of the patients receiving 4 CBT sessions met criteria for clinically significant improvement by the end of treatment compared to 43.8% of those receiving 1 CBT session, 22.2% of those provided 2 sessions, 35.3% of those receiving 8 sessions, and 9.1% of those in the control condition.
**Conclusion:** Findings suggest that 4 individual, biweekly sessions represents the optimal dosing for the CBT intervention tested. Additional dose-response studies are warranted to test CBT models that contain additional treatment components or are delivered via group therapy.
**Keywords:** Cognitive-behavioral therapy, primary insomnia
**Citation:** Edinger JD; Wohlgemuth WK; Radtke RA et al. Dose-response effects of cognitive-behavioral insomnia therapy: a randomized clinical trial. *SLEEP* 2007;30(2):203-212.

2 x 25 minute sessions + pamphlet

1 x 45 minute session + booster session of 30 minutes

4 sessions = 58.3%
1 session = 43.8%
8 sessions = 35.3%
2 sessions = 22.2%

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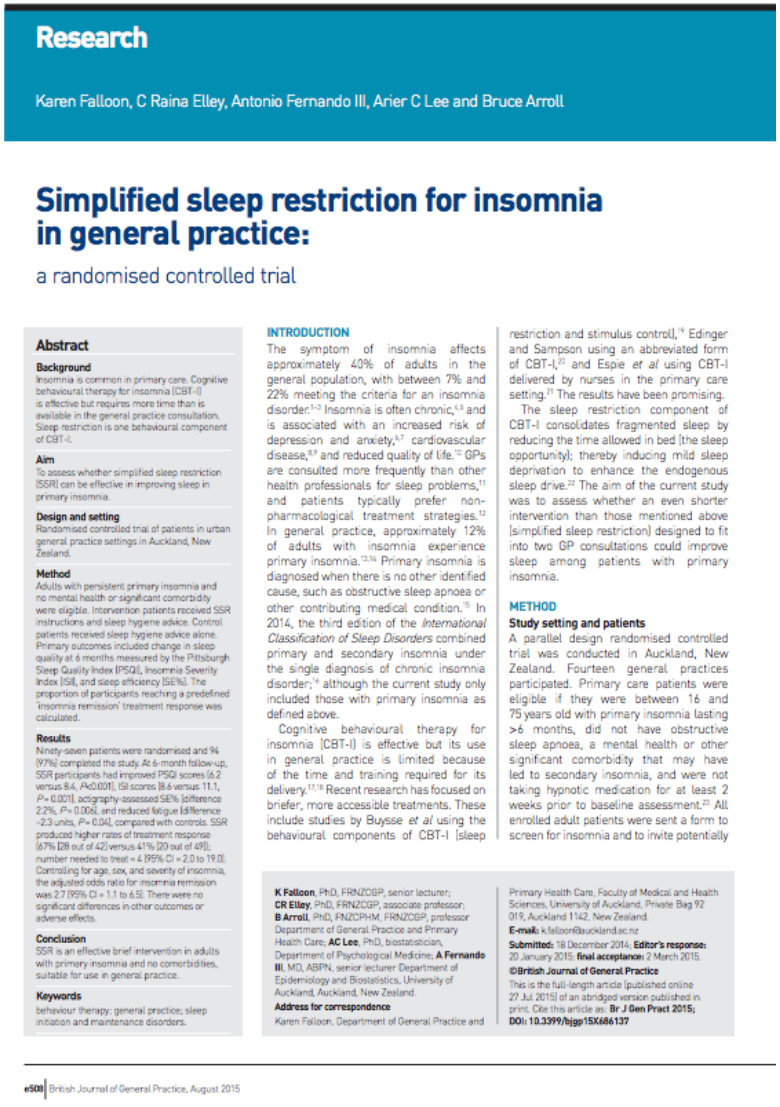
# Is this the briefest intervention?



Research

Karen Falloon, C Raina Elley, Antonio Fernando III, Arier C Lee and Bruce Arroll

## Simplified sleep restriction for insomnia in general practice:

a randomised controlled trial

**Abstract**

**Background**
Insomnia is common in primary care. Cognitive behavioural therapy for insomnia (CBT-I) is effective but requires more time than is available in the general practice consultation. Sleep restriction is one behavioural component of CBT-I.

**Aim**
To assess whether simplified sleep restriction (SSR) can be effective in improving sleep in primary insomnia.

**Design and setting**
Randomised controlled trial of patients in urban general practice settings in Auckland, New Zealand.

**Method**
Adults with persistent primary insomnia and no mental health or significant comorbidity were eligible. Intervention patients received SSR instructions and sleep hygiene advice. Control patients received sleep hygiene advice alone. Primary outcomes included change in sleep quality at 6 months measured by the Pittsburgh Sleep Quality Index (PSQI), Insomnia Severity Index (ISI), and sleep efficiency (SE%). The proportion of participants reaching a predefined 'insomnia remission' treatment response was calculated.

**Results**
Ninety-seven patients were randomised and 94 (97%) completed the study. At 6-month follow-up, SSR participants had improved PSQI scores (6.2 versus 8.4, $P<0.001$), ISI scores (8.6 versus 11.1, $P=0.001$), actigraphy-assessed SE% (difference 2.2%, $P=0.006$), and reduced fatigue (difference -2.3 units, $P=0.04$), compared with controls. SSR produced higher rates of treatment response (67% [28 out of 42] versus 41% [20 out of 49]; number needed to treat = 4 [95% CI = 2.0 to 19.0]. Controlling for age, sex, and severity of insomnia, the adjusted odds ratio for insomnia remission was 2.7 (95% CI = 1.1 to 6.5). There were no significant differences in other outcomes or adverse effects.

**Conclusion**
SSR is an effective brief intervention in adults with primary insomnia and no comorbidities, suitable for use in general practice.

**Keywords**
behaviour therapy; general practice; sleep initiation and maintenance disorders.

**INTRODUCTION**

The symptom of insomnia affects approximately 40% of adults in the general population, with between 7% and 22% meeting the criteria for an insomnia disorder.[1–3] Insomnia is often chronic,[4,5] and is associated with an increased risk of depression and anxiety,[6,7] cardiovascular disease,[8,9] and reduced quality of life.[10] GPs are consulted more frequently than other health professionals for sleep problems,[11] and patients typically prefer non-pharmacological treatment strategies.[12] In general practice, approximately 12% of adults with insomnia experience primary insomnia.[13,14] Primary insomnia is diagnosed when there is no other identified cause, such as obstructive sleep apnoea or other contributing medical condition.[15] In 2014, the third edition of the *International Classification of Sleep Disorders* combined primary and secondary insomnia under the single diagnosis of chronic insomnia disorder;[16] although the current study only included those with primary insomnia as defined above.

Cognitive behavioural therapy for insomnia (CBT-I) is effective but its use in general practice is limited because of the time and training required for its delivery.[17,18] Recent research has focused on briefer, more accessible treatments. These include studies by Buysse *et al* using the behavioural components of CBT-I (sleep restriction and stimulus control),[19] Edinger and Sampson using an abbreviated form of CBT-I,[20] and Espie *et al* using CBT-I delivered by nurses in the primary care setting.[21] The results have been promising.

The sleep restriction component of CBT-I consolidates fragmented sleep by reducing the time allowed in bed (the sleep opportunity); thereby inducing mild sleep deprivation to enhance the endogenous sleep drive.[22] The aim of the current study was to assess whether an even shorter intervention than those mentioned above (simplified sleep restriction) designed to fit into two GP consultations could improve sleep among patients with primary insomnia.

**METHOD**

**Study setting and patients**

A parallel design randomised controlled trial was conducted in Auckland, New Zealand. Fourteen general practices participated. Primary care patients were eligible if they were between 16 and 75 years old with primary insomnia lasting >6 months, did not have obstructive sleep apnoea, a mental health or other significant comorbidity that may have led to secondary insomnia, and were not taking hypnotic medication for at least 2 weeks prior to baseline assessment.[23] All enrolled adult patients were sent a form to screen for insomnia and to invite potentially

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**Submitted:** 18 December 2014; **Editor's response:** 20 January 2015; **final acceptance:** 2 March 2015.

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**DOI: 10.3399/bjgp15X686137**



1 session x 34 minutes

No significant changes in subjective sleep continuity

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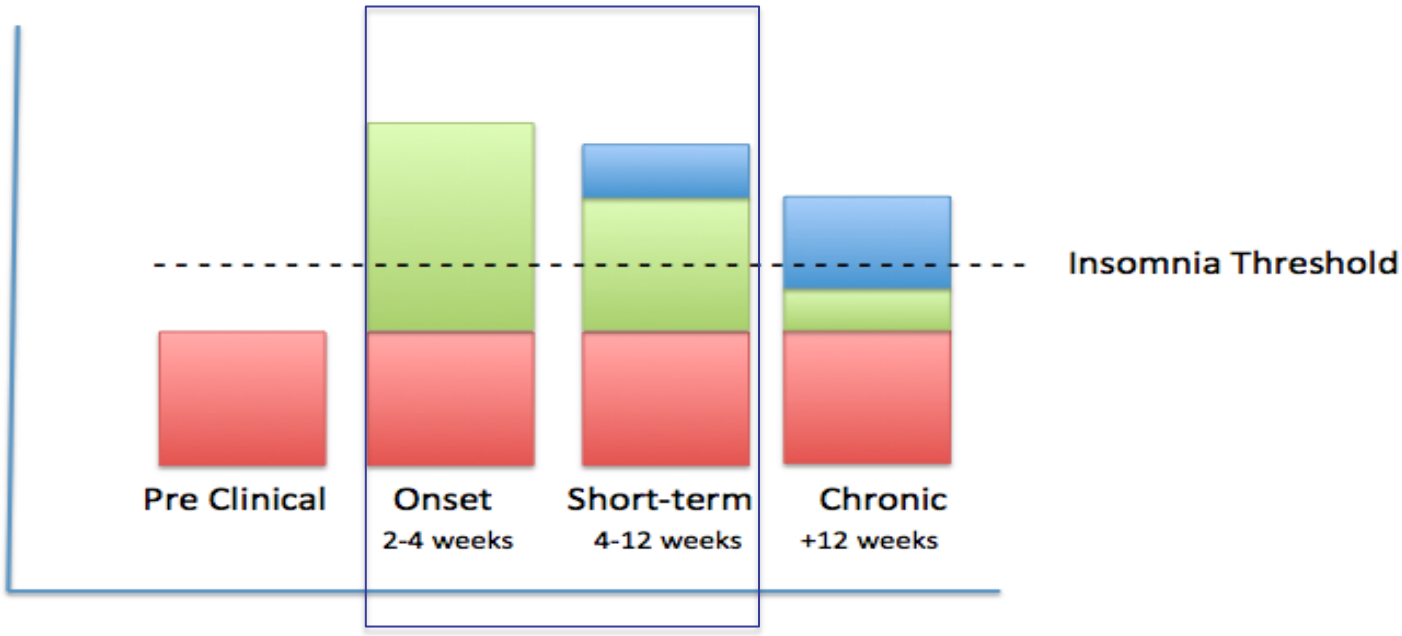
# An Alternative Perspective

# An Alternative Perspective




# Why might Addressing Acute Insomnia be Important?

- Delivery of preventative platform would likely be easier than full CBT-I
    - Less conditioned arousal
    - 'Self-Schemata' of insomnia not fully realized
- Reductions in direct and indirect costs associated with chronic insomnia

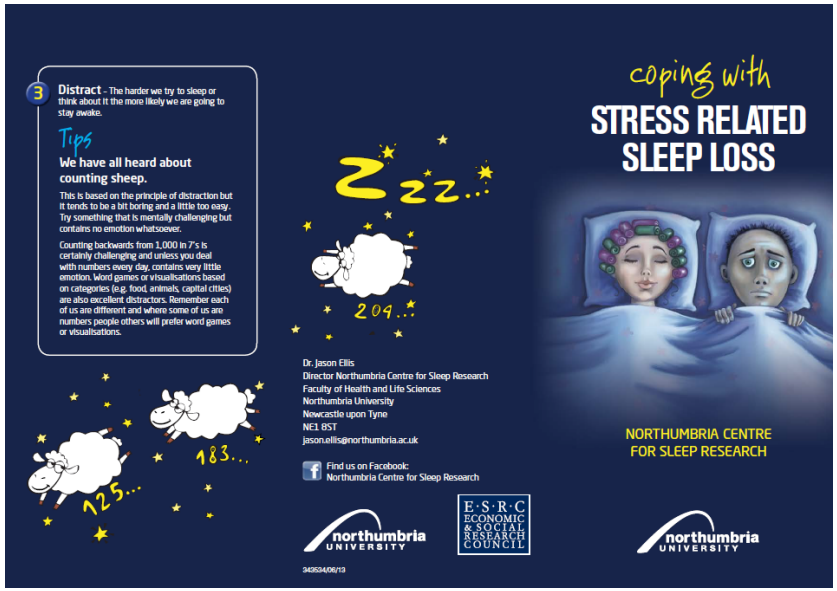
**"An ounce of early intervention with acute insomnia may be worth a pound of CBT-I in the context of chronic insomnia"**

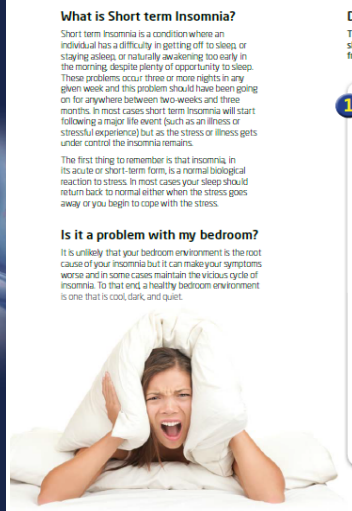
Dr. Michael Perlis

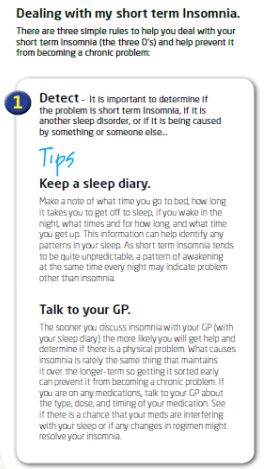
# Are Perpetuating Variables Evident in Acute Insomnia

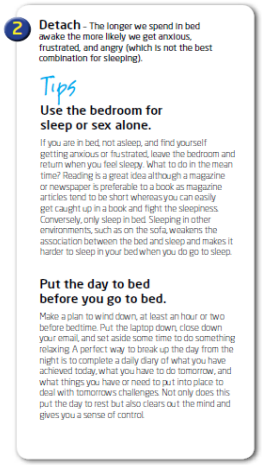
| Variable Cluster | Acute Insomnia (n = 140) Mean | SD | Normal Sleeper (n = 737) Mean | SD | t | p | > < |
|---|---|---|---|---|---|---|---|
| **Levels of Sleep Disturbance** | | | | | | | |
| PSQI Scores | 10.82 | 3.12 | 5.87 | 2.38 | 17.83 | p<.001 | AI > NS |
| ISI Scores | 13.51 | 5.45 | 4.56 | 3.71 | 18.63 | p<.001 | AI > NS |
| **Predisposing Characteristics** | | | | | | | |
| Neuroticism | 43.71 | 11.63 | 37.52 | 9.81 | 5.91 | p<.001 | AI > NS |
| Extraversion | 45.73 | 9.46 | 49.28 | 7.48 | 4.2 | p<.001 | NS > AI |
| Openess to Experience | 48.52 | 8.2 | 46.1 | 7.27 | 3.3 | p<.001 | AI > NS |
| Agreeableness | 52.14 | 7.32 | 53.39 | 8.51 | 2.04 | p<.05 | |
| Conscientiousness | 48.95 | 9.27 | 52.39 | 7.71 | 4.13 | p<.001 | NS > AI |
| FIRST Scores | 23.96 | 5.55 | 20.22 | 5.17 | 7.52 | p<.001 | AI > NS |
| Arousal Predisposition Scores | 34.56 | 8.09 | 31.58 | 7.1 | 4.48 | p<.001 | AI > NS |
| TCQ: Distraction | 14.37 | 3.32 | 14.95 | 2.89 | 1.92 | p=.06 | |
| TCQ: Social Control | 12.28 | 3.99 | 12.97 | 4.23 | 1.78 | p=.08 | |
| TCQ: Worry | 10.77 | 2.91 | 9.69 | 2.83 | 4.13 | p<.001 | AI > NS |
| TCQ: Punishment | 10.37 | 2.86 | 9.46 | 2.39 | 3.52 | p<.001 | AI > NS |
| TCQ: Reappraisal | 13.73 | 2.95 | 13.14 | 3.42 | 2.11 | p<.05 | |
| **Precipitating Characteristics** | | | | | | | |
| Life Event Scale Scores | 180.95 | 99.98 | 155.11 | 96.41 | 2.99 | p<.004 | AI > NS |
| Perceived Stress Scores | 43.4 | 7.45 | 37.61 | 7.02 | 8.86 | p<.001 | AI > NS |
| HADS: Anxiety | 9.84 | 4.17 | 6.29 | 3.9 | 9.3 | p<.001 | AI > NS |
| HADS: Depression | 7.14 | 3.41 | 4.46 | 2.78 | 9.71 | p<.001 | AI > NS |
| Daily Hassles | 46.54 | 24.82 | 29.96 | 19.31 | 8.87 | p<.001 | AI > NS |
| Brief COPE: Self-Distraction | 4 | 1.03 | 4.84 | 1 | 1.77 | p=.08 | |
| Brief COPE: Active Coping | 5.33 | 1.28 | 5.35 | 1.36 | 0.14 | p=.89 | |
| Brief COPE: Denial | 5.45 | 1.25 | 5.37 | 1.32 | 0.72 | p=.47 | |
| Brief COPE: Behavioural Dis. | 4.81 | 1.35 | 4.77 | 1.85 | 1.26 | p=.21 | |
| Brief COPE: Substance Use | 4.31 | 1.2 | 4.08 | 1.21 | 2.07 | p<.05 | |
| Brief COPE: Emotional Support | 4.61 | 1.35 | 4.8 | 1.36 | 1.48 | p=.14 | |
| Brief COPE: Instrumental Support | 3.6 | 1.26 | 3.47 | 1.26 | 1.11 | p=.27 | |
| Brief COPE: Venting | 3.7 | 1.31 | 3.58 | 1.2 | 1.13 | p=.13 | |
| Brief COPE: Positive Reframing | 3.86 | 1.25 | 3.63 | 1.12 | 2.21 | p<.05 | |
| Brief COPE: Planning | 3.84 | 1.16 | 3.65 | 1.1 | 1.81 | p=.07 | |
| Brief COPE: Humour | 5.76 | 1.43 | 4.41 | 1.26 | 2.9 | p<.004 | AI > NS |
| Brief COPE: Acceptance | 2.65 | 0.91 | 2.49 | 0.8 | 2.02 | p<.05 | |
| Brief COPE: Religion | 4.41 | 1.36 | 3.76 | 1.33 | 5.24 | p<.001 | AI > NS |
| Brief COPE: Self-Blame | 3.82 | 1.11 | 3.46 | 1.04 | 1.6 | p=.11 | |
| **Perpetuating Characteristics** | | | | | | | |
| Pre-Sleep Arousal: Cognitive | 23.96 | 6.75 | 18.7 | 6.08 | 8.59 | p<.001 | AI > NS |
| Pre-Sleep Arousal: Somatic | 13.45 | 5.21 | 10.58 | 3.53 | 6.24 | p<.001 | AI > NS |
| FFS Scores | 17.45 | 5.6 | 11.03 | 5.2 | 13.23 | p<.001 | AI > NS |
| SPS Scores: Cog. and Behav. | 54.32 | 13.89 | 45.34 | 14.08 | 6.94 | p<.001 | AI > NS |
| SPS Scores: Affective | 24.66 | 8.64 | 14.27 | 5.57 | 13.7 | p<.001 | AI > NS |
| DBAS-16 Scores | 82.25 | 26.36 | 58.71 | 22.46 | 9.91 | p<.001 | AI > NS |

# Self-help Pamphlet




*Detect* – how to record your sleep
*Detach* – stimulus control instructions
*Distract* – cognitive control and imagery distraction instructions

Feasibility study with a sample of individuals with acute insomnia (n = 15)

Cognitive arousal ($t(14) = -5.78$, $p<.001$)
Somatic arousal ($t(14) = -4.33$, $p<.001$)

# Single Session CBT-I

- Sleep Education & Sleep Hygiene
  - Address Sleep-related Dysfunctional Beliefs

- Sleep Restriction
  - Previous weeks TST = TIB (Anchor TIB to AM)
  - Titrate @ 15 minutes after 1 week
  - Reduce <85% SE / No Change 85-90% SE / Increase >90% SE

- Introduce Pamphlet
  - Stimulus Control
  - Cognitive Control and Imagery Techniques

- Discuss any perceived barriers to implementation

# Study Overview

**88 Screening Interviews (n = 88)**
- DSM-5 Insomnia Disorder
- Less than 3 months duration
- No prior experience of CBT-I
- No current sleep medication use

**Excluded**
- Chronic Insomnia (n = 41)
- Currently taking sleep medication (n = 2)
- Previous exposure to CBT-I (n = 0)

**Loss of Subjects**
- No longer wished to take part (n = 4)
- Just about to start cCBT-I (n = 1)

Randomized to Wait List Control (n = 20)

Randomized to CBT-I (n = 20)

1 Week Post Tx Sleep Diaries (n = 20)

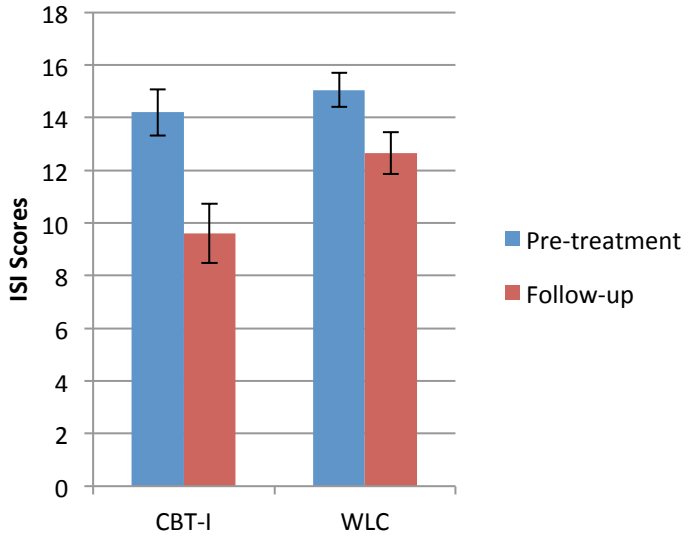
1 Month Follow-Up (n = 20)

1 Month Follow-Up (n = 20)

Single (60-70 minute) session of CBT-I

+

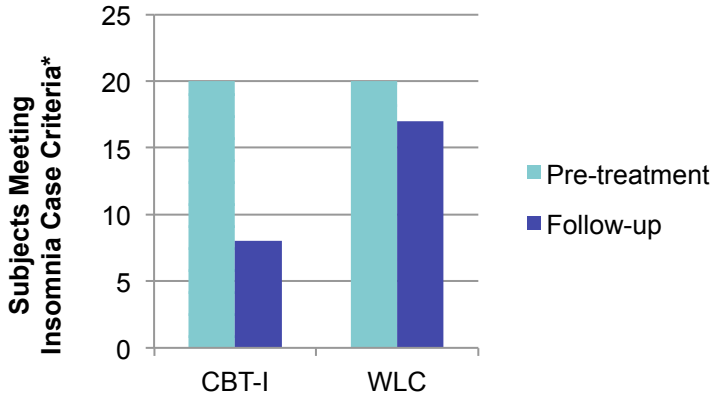
# Results on the ISI




Post-treatment

(t(38)=2.24, p<.05)

*d* = .64




CBT-I = 60% Remission
WLC = 15% Remission

($\chi^2$=8.64, df = 1, p<.003)

* Case criteria defined as ≥10 on the ISI

# Impact on Sleep Continuity

F(5,34)=3.57, p=.01, Wilkes' Lambda = .66; partial eta squared = .34

## Change Scores

| | CBT-I Group (n = 20) | | Control Group (n = 20) | | Between-Group Differences on Change Scores |
|---|---|---|---|---|---|
| | M | SE | M | SE | Cohen's d* |
| Sleep Latency (minutes) | -20.36 | 3.38 | -3.04 | 7.19 | 0.71 |
| Number of Awakenings | -0.49 | 0.17 | -0.14 | 0.37 | 0.27 |
| Wake After Sleep Onset (minutes) | -25.91 | 3.32 | -8.43 | 6.61 | 0.77 |
| Total Sleep Time (minutes) | 4.28 | 12.45 | -8.47 | 9.54 | 0.28 |
| Sleep Efficiency (percentage) | 10.55 | 4.39 | 1.29 | 3.47 | 0.69 |

* = Cohen's d was calculated between groups using the mean change scores (pre-treatment to follow-up) on each variable

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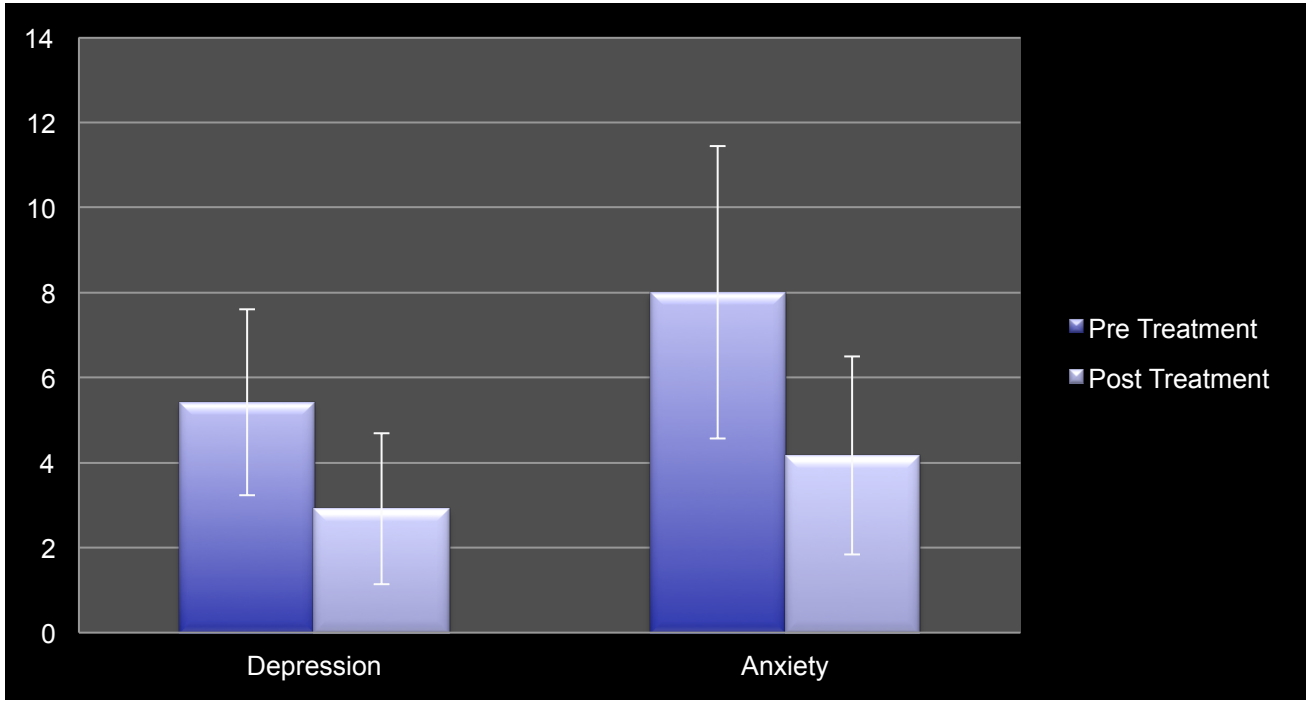
* = Cohen's d was calculated between groups using the mean change scores (pre-treatment to follow-up) on each variable

# What about its impact on Mood?




| | | |
|---|---|---|
| Depression | t(11)=4.02, p<.002 | *d* = 1.25 |
| Anxiety | t(11)=3.65, p<.004 | *d* = 1.3 |

# A Final Thought

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CLINICAL REVIEW

## Towards standardisation and improved understanding of sleep restriction therapy for insomnia disorder: A systematic examination of CBT-I trial content

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# With Thanks


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