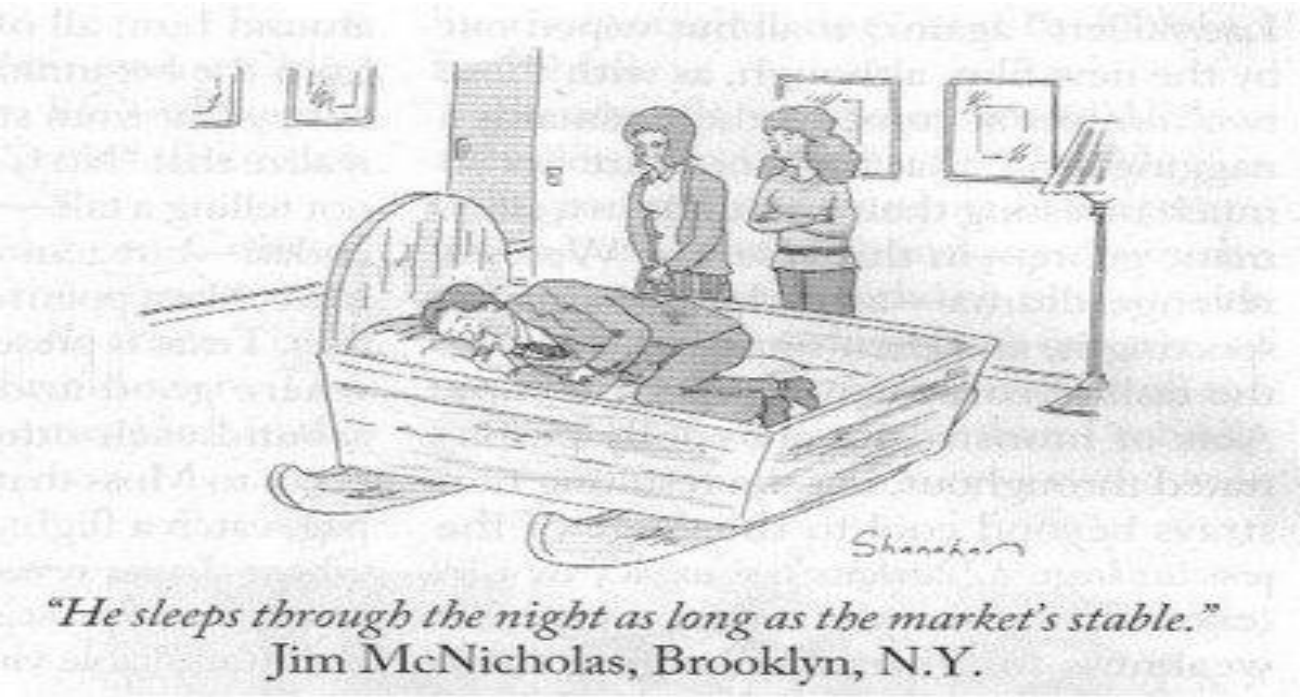
Cognitive Behavioural Therapy for Insomnia (CBT-I) – Alternate Delivery Modalities

Professor Jason Ellis



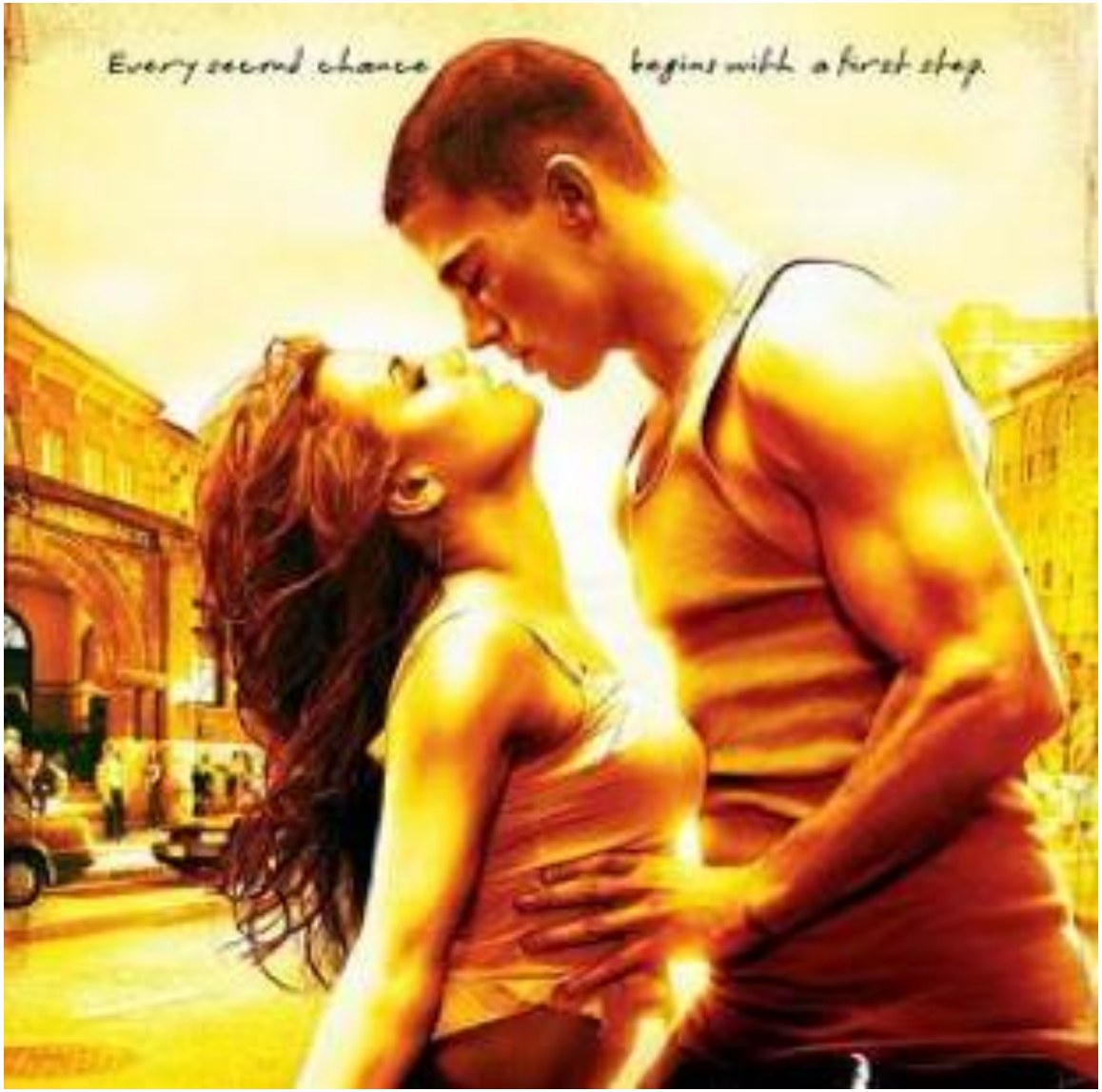
"He sleeps through the night as long as the market's stable."
Jim McNicholas, Brooklyn, N.Y.

Starting at the end….
CBT-I is:

- Good comparative efficacy and effectiveness to pharmacotherapy
- Cheaper (in the long run) compared to pharmacotherapy
- Effective with complex cases as with ‘pure’ cases

So what’s the problem….?
CBT-I is:

- Hampered by very few clinicians
- Perceived as time and labor intensive
- Prone to high levels of attrition (30%) and non-adherence


Every second chance
begins with a first step

A Stepped Care Model of Insomnia

COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA

"Stepped Care": A Health Technology Solution for Delivering Cognitive Behavioral Therapy as a First Line Insomnia Treatment

Colin A. Espie, PhD

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There is a large body of evidence that Cognitive Behavioral Therapy for insomnia (CBT) is an effective treatment for persistent insomnia. However, despite two decades of research it is still not readily available, and there are no immediate signs that this situation is about to change. This paper proposes that a service delivery model, based on "stepped care" principles, would enable this relatively scarce healthcare expertise to be applied in a cost-effective way to achieve optimal development of CBT services and best clinical care. The research evidence on methods of delivering CBT, and the associated clinical leadership roles, is reviewed. On this basis, self-administered CBT is posited as the "entry level" treatment for stepped care, with manualized, small group, CBT delivered by nurses, at the next level. Overall, a hierarchy comprising five levels of CBT stepped care is suggested. Allocation to a particular level should reflect assessed need, which in turn represents increased resource requirement in terms of time, cost and expertise. Stepped care models must also be capable of "referring" people upstream where there is an incomplete therapeutic response to a lower level intervention. Ultimately, the challenge is for CBT to be delivered competently and effectively in diversified formats on a whole population basis. That is, it needs to become "scalable". This will require a robust approach to clinical governance.

Keywords: Insomnia, psychological treatment, cognitive behavior therapy, primary care, population

Citation: Espie CA. "Stepped care": A health technology solution for delivering Cognitive Behavioral Therapy as a first line insomnia treatment. *SLEEP* 2009;32(12):1549-1558.

A Stepped Care Model of Insomnia

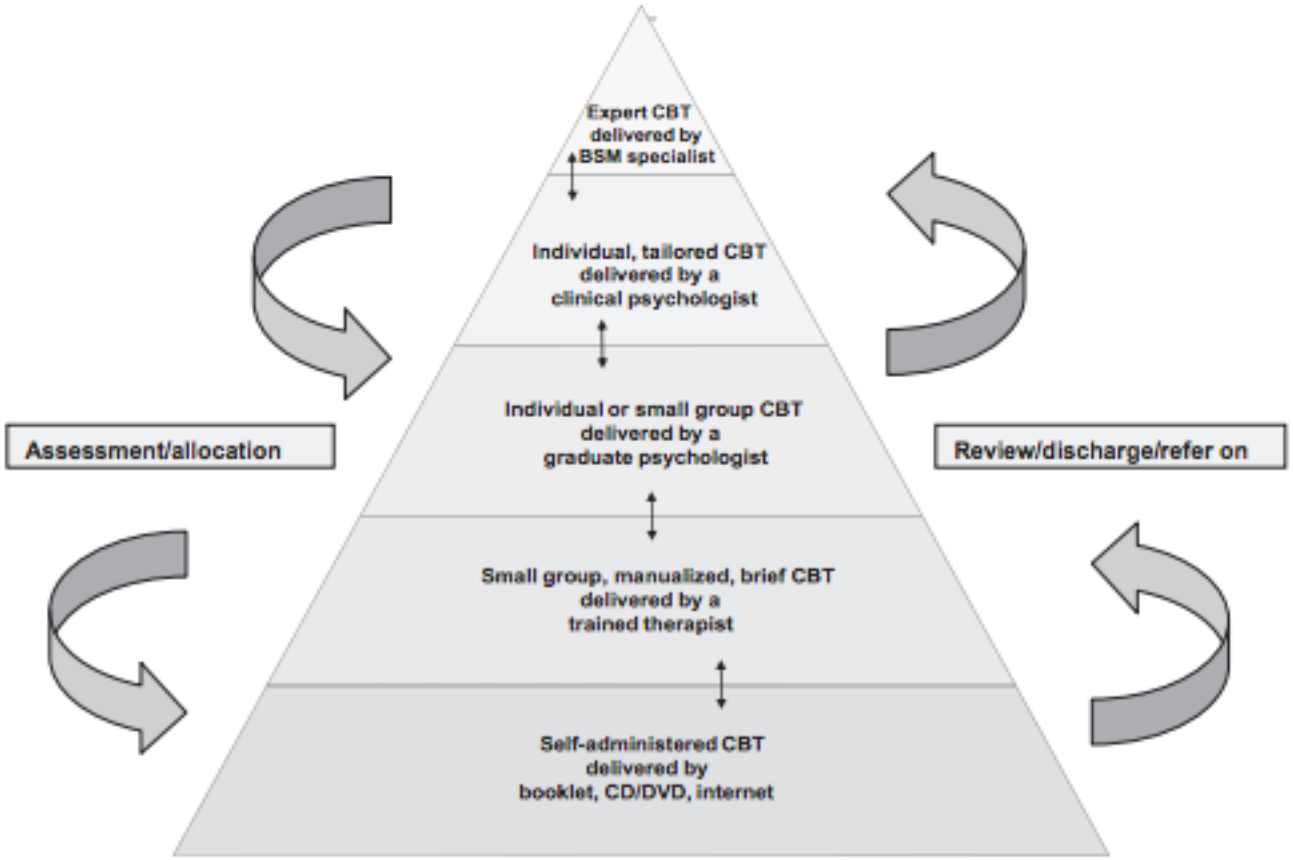

Figure 4—An evidence-based stepped care model for CBT (c. 2009) illustrating how patients might be allocated to resources in relation to assessed need, to achieve optimal service provision. Arrows represent self-correcting referral movements.

Self-Help

Journal of Consulting and Clinical Psychology
1999, Vol. 67, No. 4, 511–519

0022-006X/99/$3.00

Self-Help Treatment for Insomnia: Bibliotherapy With and Without Professional Guidance

Véronique Mimeault and Charles M. Morin
Université Laval

Scandinavian Journal of Psychology, 2011, 52, 580–585 DOI: 10.1111/j.1467-9450.2011.00902.x

Personality and Social Psychology

A self-help book is better than sleep hygiene advice for insomnia: A randomized controlled comparative study

BJØRN BJORVATN,[1,2] ELDBJØRG FISKE[1,2] and STÅLE PALLESEN[2,3]

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[3]*Department of Psychosocial Science, University of Bergen, Norway*

Self-Help – Pros and Cons

- Pros:
  - Wide access
  - Easy to do
- Cons:
  - No screening for comorbidities
  - High dropout rates
  - Completely reliant on self-management
  - Interpretation

Self-Help Needs Help

Jernelöv et al. BMC Psychiatry 2012, 12:5
http://www.biomedcentral.com/1471-244X/12/5

BMC Psychiatry

RESEARCH ARTICLE Open Access

Efficacy of a behavioral self-help treatment with or without therapist guidance for co-morbid and primary insomnia –a randomized controlled trial

Susanna Jernelöv[1*], Mats Lekander[1,2,3], Kerstin Blom[1], Sara Rydh[1], Brjánn Ljótsson[1], John Axelsson[1,2] and Viktor Kaldo[1]

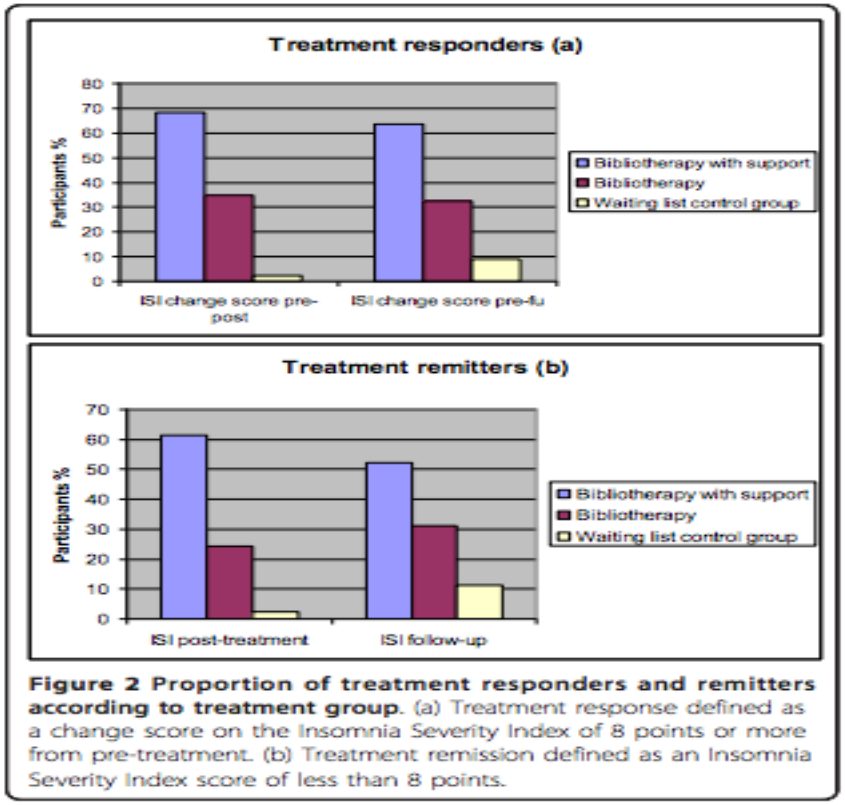


Figure 2 Proportion of treatment responders and remitters according to treatment group. (a) Treatment response defined as a change score on the Insomnia Severity Index of 8 points or more from pre-treatment. (b) Treatment remission defined as an Insomnia Severity Index score of less than 8 points.

Group Therapy

Group Therapy

- Groups generally 6-8 people
- Usually longer than 60 minute session
- What to do about sleep diaries
  - Patients does calculations before session
  - Therapist checks calculations and titrates
  - This may take up the majority of the session

Group Therapy – Pros and Cons

- Pros:
  - Cheaper than individual
  - More patients treated
- Cons:
  - Limited screening for comorbidities
  - Higher dropout rates than individual
  - Largely reliant on patient

Computerized CBT-I

sleepstation

SHUTi™

Sleep Healthy Using the Internet

Computerized CBT-I – Pros and Cons

- Pros:
  - Wide availability
  - Complete at own speed
- Cons:
  - Limited assessment of comorbidities
  - Reduced efficacy (SOL)
  - Extreme variability

Telehealth

Same as Individual CBT-I but conducted remotely (e.g. Skype)

Telehealth – Pros and Cons

- Pros:
  - Increases access for hard to reach populations
- Cons:
  - Issues with security and privacy
  - State license issues

Telehealth – Pros and Cons

Mobile Applications

Sleep Hypnos
Surf City Apps
FREE

Insomnia.gr
Insomnia.gr
FREE

Cure Insomni
Internet Mastermind
FREE

Universal - Yc
Saagara
FREE

Insomnia
jbw56
FREE

Insomnia(Sle
A.Akira
FREE

Insomnia
Heppnerd Interactive
FREE

Insomnia
Mobile Apps or Website
FREE

Mobile Applications – Pros and Cons

- Pros:
  - Access is very easy
  - Familiarity with modality
- Cons:
  - No assessment of comorbidities
  - Not validated
  - Communication errors

What is the Optimal Dosage?

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.

<u>Clinically Significant Improvement</u>

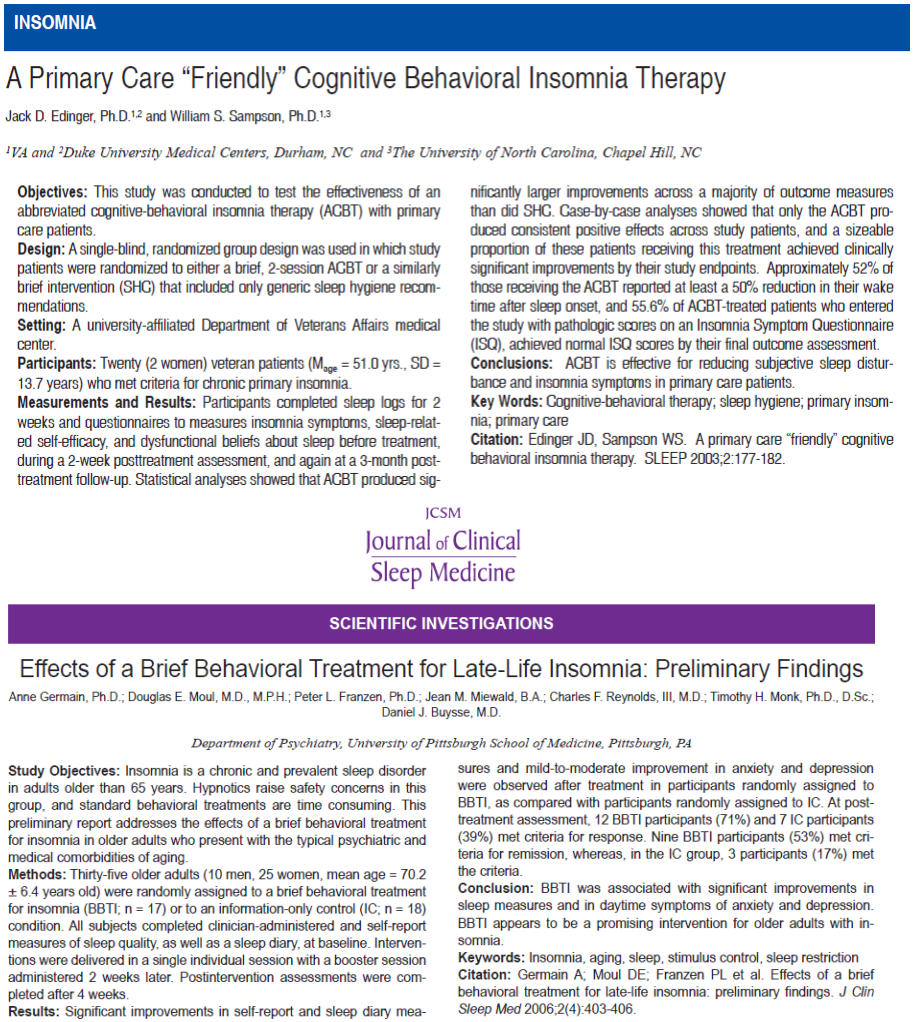
4 sessions = 58.3%

1 session = 43.8%

8 sessions = 35.3%

2 sessions = 22.2%

What Do Brief Interventions for Insomnia 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

Objectives: This study was conducted to test the effectiveness of an abbreviated cognitive-behavioral insomnia therapy (ACBT) with primary care patients.
Design: A single-blind, randomized group design was used in which study patients were randomized to either a brief, 2-session ACBT or a similarly brief intervention (SHC) that included only generic sleep hygiene recommendations.
Setting: A university-affiliated Department of Veterans Affairs medical center.
Participants: Twenty (2 women) veteran patients (M_{age} = 51.0 yrs., SD = 13.7 years) who met criteria for chronic primary insomnia.
Measurements and Results: Participants completed sleep logs for 2 weeks and questionnaires to measures insomnia symptoms, sleep-related self-efficacy, and dysfunctional beliefs about sleep before treatment, during a 2-week posttreatment assessment, and again at a 3-month posttreatment follow-up. Statistical analyses showed that ACBT produced significantly larger improvements across a majority of outcome measures than did SHC. Case-by-case analyses showed that only the ACBT produced consistent positive effects across study patients, and a sizeable proportion of these patients receiving this treatment achieved clinically significant improvements by their study endpoints. Approximately 52% of those receiving the ACBT reported at least a 50% reduction in their wake time after sleep onset, and 55.6% of ACBT-treated patients who entered the study with pathologic scores on an Insomnia Symptom Questionnaire (ISQ), achieved normal ISQ scores by their final outcome assessment.
Conclusions: ACBT is effective for reducing subjective sleep disturbance and insomnia symptoms in primary care patients.
Key Words: Cognitive-behavioral therapy; sleep hygiene; primary insomnia; primary care
Citation: Edinger JD, Sampson WS. A primary care "friendly" cognitive behavioral insomnia therapy. SLEEP 2003;2:177-182.

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.

Department of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, PA

Study Objectives: Insomnia is a chronic and prevalent sleep disorder in adults older than 65 years. Hypnotics raise safety concerns in this group, and standard behavioral treatments are time consuming. This preliminary report addresses the effects of a brief behavioral treatment for insomnia in older adults who present with the typical psychiatric and medical comorbidities of aging.
Methods: Thirty-five older adults (10 men, 25 women, mean age = 70.2 ± 6.4 years old) were randomly assigned to a brief behavioral treatment for insomnia (BBTI; n = 17) or to an information-only control (IC; n = 18) condition. All subjects completed clinician-administered and self-report measures of sleep quality, as well as a sleep diary, at baseline. Interventions were delivered in a single individual session with a booster session administered 2 weeks later. Postintervention assessments were completed after 4 weeks.
Results: Significant improvements in self-report and sleep diary measures and mild-to-moderate improvement in anxiety and depression were observed after treatment in participants randomly assigned to BBTI, as compared with participants randomly assigned to IC. At post-treatment assessment, 12 BBTI participants (71%) and 7 IC participants (39%) met criteria for response. Nine BBTI participants (53%) met criteria for remission, whereas, in the IC group, 3 participants (17%) met the criteria.
Conclusion: BBTI was associated with significant improvements in sleep measures and in daytime symptoms of anxiety and depression. BBTI appears to be a promising intervention for older adults with insomnia.
Keywords: Insomnia, aging, sleep, stimulus control, sleep restriction
Citation: Germain A; Moul DE; Franzen PL et al. Effects of a brief behavioral treatment for late-life insomnia: preliminary findings. *J Clin Sleep Med* 2006;2(4):403-406.

2 x 25 minute sessions + pamphlet

1 x 45 minute session + booster session of 30 minutes

Evidence for Stepped Care

NEW RESEARCH

SCIENTIFIC INVESTIGATIONS

JCSM
Journal of Clinical Sleep Medicine
http://dx.doi.org/10.5664/jcsm.2484

Stepped Care for Insomnia: An Evaluation of Implementation in Routine Practice

Norah Vincent, Ph.D., Kate Walsh, B.A.
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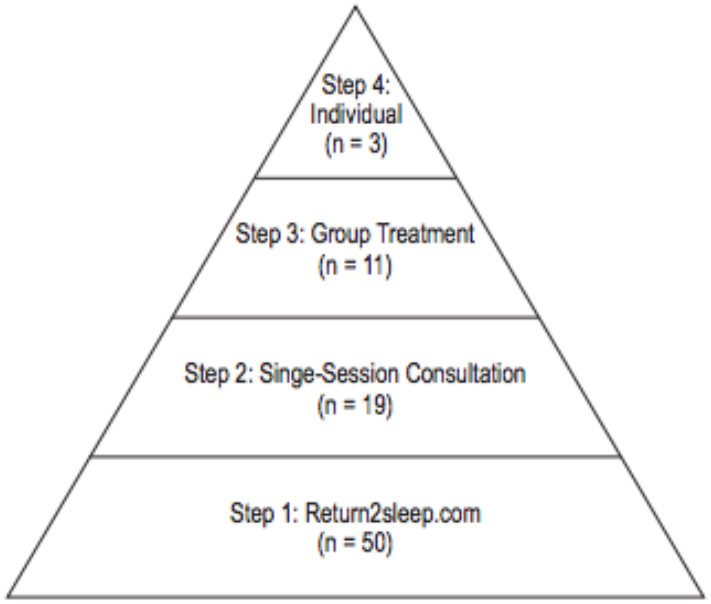
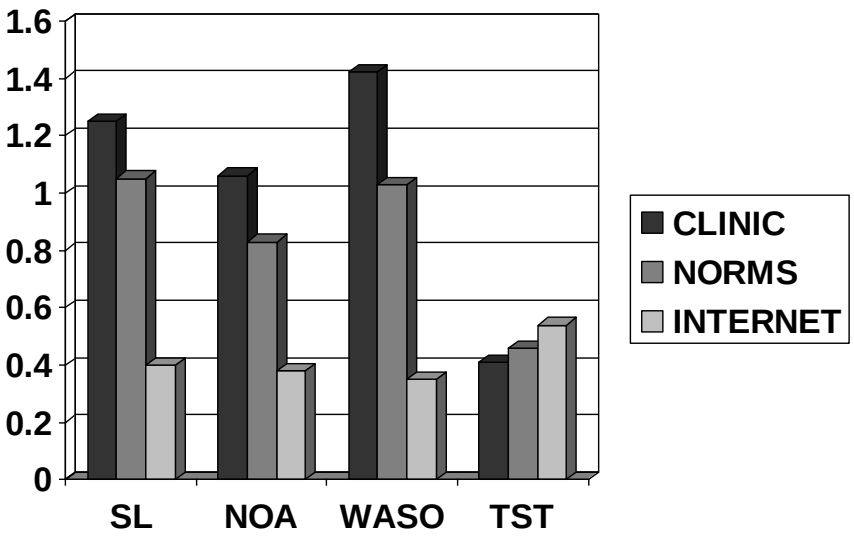
Study Objectives: Stepped care models for chronic insomnia are in their infancy. This study evaluated predictors of movement in a stepped care pathway using a sample of 50 adult outpatients with chronic insomnia.
Methods: At assessment periods, participants completed daily sleep diaries, the Insomnia Severity Index, the Multi-Dimensional Fatigue Inventory (MFI), and the Dysfunctional Beliefs and Attitudes about Sleep Scale (DBAS–10). Following this, data were collected regarding whether the individual went on to receive more intensive services (i.e., individual consultation, group or individual therapy). Data were analyzed using multinomial logistic regression.
Results: Results showed that age, employment status, and sleep (quality, latency) predicted use of more intensive services. Results showed that psychiatric and sleep comorbidity, sleep attitudes, and insomnia severity did not.
Conclusions: Implications of these findings are that stepped care resulted in a 69% improvement in efficiency, and that low-intensity treatment delivered in step 1 may have been particularly sufficient for the young and employed, and for those with better sleep.
Keywords: Stepped care, insomnia, computerized treatment
Citation: Vincent N; Walsh K. Stepped care for insomnia: an evaluation of implementation in routine practice. *J Clin Sleep Med* 2013;9(3):227-234.

Figure 1—Stepped care model



Evidence for Different Modalities



ON-LINE TREATMENT OF INSOMNIA

Logging on for Better Sleep: RCT of the Effectiveness of Online Treatment for Insomnia

Norah Vincent, PhD; Samantha Lewycky, MA

Department of Clinical Health Psychology, University of Manitoba, Manitoba, Canada

Study Objectives: Despite effective cognitive behavioral treatments for chronic insomnia, such treatments are underutilized.[1,2] This study evaluated the impact of a 5-week, online treatment for insomnia.
Design: This was a randomized controlled trial with online treatment and waiting list control conditions.
Participants: Participants were 118 adults with chronic insomnia.
Setting: Participants received online treatment from their homes.
Intervention: Online treatment consisted of psychoeducation, sleep hygiene, and stimulus control instruction, sleep restriction treatment, relaxation training, cognitive therapy, and help with medication tapering.
Measurement and Results: From pre- to post-treatment, there was a 33% attrition rate, and attrition was related to referral status (i.e., dropouts were more likely to have been referred for treatment rather than recruited from the community). Using a mixed model analysis of variance procedure (ANOVA), results showed that online treatment produced statistically significant improvements in the primary end points of sleep quality, insomnia severity, and daytime fatigue. Online treatment also produced significant changes in process variables of pre-sleep cognitive arousal and dysfunctional beliefs about sleep.
Conclusions: Implications of these findings are that identification of who most benefits from online treatment is a worthy area of future study.
Keywords: Online treatment, insomnia, self-administered treatment
Citation: Vincent N; Lewycky S. Logging on for better sleep: RCT of the effectiveness of online treatment for insomnia. *SLEEP* 2009;32(6):807-815.

CHRONIC INSOMNIA IS A PROBLEM PLAGUING 9% TO 9.5% OF THE POPULATION.[1,2] SUFFERERS EXPERIENCE REGULAR NOCTURNAL PROBLEMS WITH SLEEP AND report associated daytime impairment. Cognitive behavioral and pharmacotherapies have been developed for chronic insomnia and found to produce robust changes in sleep parameters.[3] Research in the area of treatment preference shows that individuals with insomnia tend to prefer behavioral over pharmacological treatments.[4,5] Given that chronic insomnia is a prevalent condition and that individuals are favorably predisposed to behavioral methods to treat this problem, only 5% to 46% seek treatment for their sleep disorder.[1,2,6,7] This rate of treatment seeking is similar to that in the area of mental health,[8] however, relatively little is known about the reasons for failure to seek treatment for insomnia. One exception is Stinson, Tang, and Harvey[9] who surveyed help-seeking and non-help-seeking adults with insomnia regarding their reasons for failing to utilize or delaying their use of treatment for insomnia. Participants could report more than one reason. Of this sample, 57% reported a belief that poor sleep would resolve on its own and/or one should be able to manage insomnia independently, 38% indicated that there was a lack of awareness of available treatment options, 31% noted a perception of treatment as ineffective or unattractive, 17% referred to a stigma surrounding insomnia, and 11% endorsed personal constraints regarding treatment-seeking. Other surveys have found that the most frequent reasons given for not consulting about mental health problems are the beliefs that these problems will go away by themselves and that individuals can manage on their own.[10] Some of the noted impediments to help-seeking could potentially be addressed through the provision of self-administered treatment.

Self-Administered Treatments for Insomnia

A recent review of self-help treatments for insomnia showed that there have been a number of published outcome studies in this area.[11-18] In these studies, treatment has been delivered using manuals, audiotapes, television, video, telephone consultation, and the Internet. Currie[19] reviewed the outcomes of these studies, which mainly used media-recruited individuals, and concluded that outcomes from self-help approaches were positive but less favorable than those from in-person psychological treatment. In these investigations, the degree to which self-help treatments were delivered as intended was unclear, as none of the studies assessed how adherent participants were to self-administered treatment with the exception of Mimeault and Morin.[20] Unfortunately these authors did not report on the actual frequency of adherence but did note that treated individuals were similar to controls in terms of self-reported adherence. One of the most promising self-administered approaches with the potential to reach a large number of people is Internet-based treatment. Although there have been a number of Internet-based treatments for other health problems, the only published study of such treatments for insomnia was conducted by Strom and colleagues.[18] Strom et al. developed a 5-week Swedish online treatment for insomnia and evaluated it with 109 community-recruited individuals diagnosed with DSM-IV chronic primary insomnia. A number of interesting results emerged from this study including the finding that the treatment produced changes in sleep parameters for primary study variables, and that the rate of attrition (24%) was comparable to North American in-person psychotherapy standards (22%).[21]

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Evidence for Different Modalities

RANDOMIZED TRIAL OF VIDEO-BASED CBT FOR INSOMNIA IN BREAST CANCER

http://dx.doi.org/10.5665/sleep.3918

Is a Video-Based Cognitive Behavioral Therapy for Insomnia as Efficacious as a Professionally Administered Treatment in Breast Cancer? Results of a Randomized Controlled Trial

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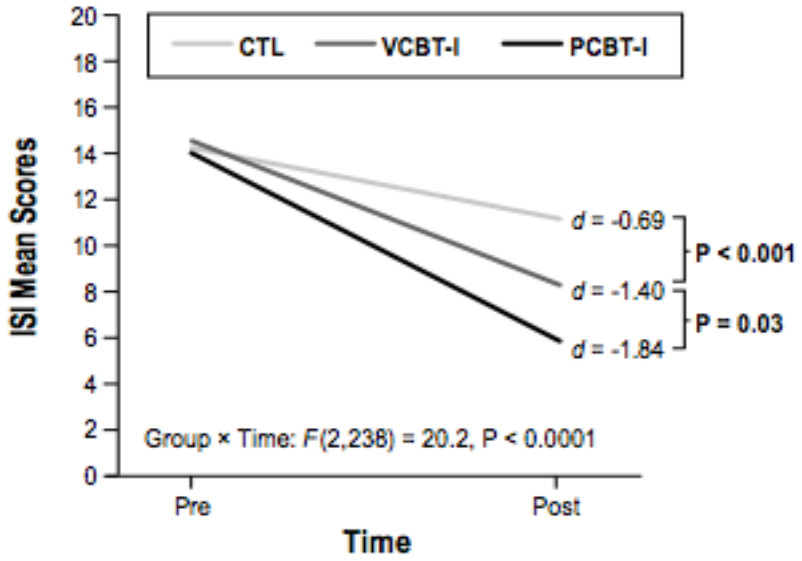

Figure 2—Between-groups differences on pretreatment versus posttreatment Insomnia Severity Index total scores. CTL , control; PCBT-I, professionally administered cognitive behavioral therapy for insomnia; VCBT-I, video-based cognitive behavioral therapy for insomnia.

Conclusions

- Individual face-to-face therapy appears to have the best efficacy
- Remote modalities address access and cost
- The higher the rung on the stepped care model the more control
    - Screening
    - Problems as they arise
    - Opportunities to address adherence
- Issue of treatment resistance