

Factors Influencing the Effectiveness of a One-Day CBT for Insomnia Workshop

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ABSTRACT

Insomnia is highly prevalent and has severe negative consequences. Cognitive Behavioural Therapy for Insomnia (CBT-I) is an evidence-based treatment that is usually delivered individually. Given the high prevalence, accessible one-day CBT-I workshops (each for up to 30 people) were developed to be run in the community for the general public (1). These CBT-I workshops have been found to reduce levels of insomnia (2, 3) and are now run on a routine basis. As yet, little is known about the impact of factors such as co-morbid depression or anxiety or receipt of previous treatment on the effectiveness of the CBT-I workshop. This study aimed to evaluate the accessibility and clinical effectiveness of a series of nine one-day CBT-I workshops (n=120) run in routine practice and to explore the impact of factors including co-morbid depression or anxiety and receipt of previous treatment, on the effectiveness of the CBT-I workshops. The CBT-I workshops were found to be effective at reducing insomnia at one-month follow-up and broadly accessible across a wide group of people in the community. In addition, significant reductions in depression and anxiety were found and the severity of depression or anxiety at baseline did not interfere with the effectiveness of the workshop. People with no previous experience of counselling or psychological therapy showed greater reduction of insomnia symptoms. It is concluded that the CBT-I workshop is an accessible and effective treatment for insomnia across a range of clinical severity and complexity. Further benefits include reductions in both depression and anxiety.

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Introduction

Symptoms of insomnia are estimated at 38.6% of the United Kingdom (UK) adult population, with a clinical diagnosis of insomnia being present in 5.8% (4). The economic burden of insomnia is significant with 76% of the estimated cost being due to absence from work and reduced productivity in the workplace (5). It can therefore be seen as a major public health problem.

Cognitive Behavioural Therapy for Insomnia (CBT-I), which is usually offered to individuals, has been shown to be an effective and lasting treatment (6, 7) which is superior to drug therapy in durability (8, 9, 10). Group CBT-I has also demonstrated efficacy (7, 11). However, despite the high prevalence of insomnia, provision of CBT-I is still low. Furthermore, access to treatment for insomnia may be impacted by factors such as unwillingness to go to the General Practitioner (GP) (12), or a lack of awareness of treatment options available (13, 14).

One solution to these problems is an accessible brief community group treatment workshop, run at weekends. Brown and colleagues (1) developed a format offering self-referral one-day CBT workshops that are run in non-medical centres such as libraries and leisure centres for a range of different problems such as stress and self-confidence/depression. These CBT group workshops are effective in reducing depression and anxiety (1, 15, 16), with improvements being maintained two years after self-confidence workshops (17). More recently this model has been applied, with success, to the treatment of insomnia (2, 3, 18).

Espie (19) reported that individual CBT-I has an approximate 70% response rate regardless of severity and chronicity of presenting characteristics. However, the generalisability of group CBT-I workshops across different clinical groups has not yet been formally assessed. According to the 'Stepped Care' model (19), greater severity or complexity, such as comorbidity, may interfere with the benefits gained from group work-

shops. In addition, other factors could indicate greater complexity and chronicity of insomnia such as non-response to prior psychological treatment. Examining the impact of these factors on the efficacy of group CBT-I workshops could contribute towards the identification of people who are more or less likely to benefit from one-day CBT-I workshops.

Finally, individual CBT-I has been reported to reduce symptoms of anxiety (e.g. 20, 21) and depression (20, 22, 23); however, it is not yet known whether group CBT-I might also impact on reducing comorbid anxiety or depression (7).

The main objective of the current study was to evaluate the accessibility and clinical effectiveness of a series of large-scale one-day CBT-I workshops run in routine practice. A further aim was to explore the impact of factors such as co-morbid depression or anxiety or receipt of previous treatment on the effectiveness of the CBT-I workshops as well as to assess indirect impacts of group CBT-I on comorbid anxiety or depression.

Methods

Design

Between 2008 and 2011, nine 'How to Improve Sleep' workshops were run in a public library in London as part of a series of four programmes. Other workshops in the series included 'Improving Self Confidence', 'Managing Anger', and 'Handling Stress'.

Publicity material was distributed to libraries, GP practices, counsellors, health centres, community mental health teams, and leisure centres. The publicity material used A5 flyers titled 'How to Improve Your Sleeping - One day workshops to help you handle your sleeping problems better'. Each flyer advertised upcoming workshops and invited people interested in attending to telephone or email for further information. Only adults currently living or working in the borough were eligible

to attend the workshops. No other exclusion criterion was used.

Interested individuals were invited to attend a one-hour introductory talk. During these talks, the format and content of the workshops were described, any questions arising were answered and baseline measures were completed.

Workshop Programme

The workshop programme was derived from Morin and Espie (24) and adapted into the 1-day large-group format. Sessions were led by two clinical or counselling psychologists, with general expertise in CBT, and an assistant psychologist. The 7 workshop sessions are shown in Table 1.

Participants were expected to attend the whole workshop. On average, approximately 30 minutes was spent explaining and discussing each method (e.g. sleep scheduling) with participants. The programme content and teaching format (small and large group exercises) was varied throughout to maintain the interest and engagement of the group. Information was simultaneously presented on colourful slides (including cartoons and diagrams) corresponding to manuals given to

finished at 4:30pm with refreshment breaks throughout the day.

Measures

Data were collected from participants at two time-points; at the introductory talk ('baseline'), and at a follow-up meeting four weeks after the workshop ('follow-up').

Demographics and treatment-seeking questionnaire: Socio-demographic data (gender, age, employment status and ethnicity) and information about previous help-seeking were gathered at baseline using a custom designed questionnaire. Questions relating to previous help-seeking included "Have you ever tried counselling or psychological help before? Yes/ No".

The Insomnia Severity Index (ISI) (25) is a 7-item self-report measure of impaired sleep found to have robust psychometric properties. Scores are categorised into 'not clinically significant insomnia' (0-7), 'sub-threshold insomnia' (8-14), 'clinical insomnia (moderate severity)' (15-21) and 'clinical insomnia (severe)' (22-28).

The 9-item Patient Health Questionnaire (PHQ-9) (26) is a reliable and valid brief assessment tool for assessing severity of depression symptoms. The total score ranges

Table 1. Workshop sessions

Session No.	Session Title	Contents
1	Sleep Basics	Information about sleep and the potential effects of inadequate sleep
2	Model of Sleep Quality	Introduction to a CBT model of Sleep Quality- highlighting links between thoughts, feelings and behaviours.
3	Sleep Hygiene	Lifestyle factors and habits and how these can affect sleep
4	Sleep Scheduling	Explanation of Sleep restriction – a method of improving sleep efficiency Explanation of Stimulus control
5	Sleep thoughts	Cognitive techniques for managing thoughts related to sleep Explanation of attitudes and beliefs about sleep and their impact
6	Sleep feelings (including pre-bedtime wind-down)	Scheduling a pre-bedtime wind down Relaxation
7	Overview	Summary of the sessions

participants. The programme started at 9:30am and

from 0 to 27 and can be categorised into none (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27) depression.

The 7-item Generalised Anxiety Disorder scale (GAD-7) (27) is a reliable and valid measure of severity of generalised anxiety symptoms. The total score ranges from 0 to 21 with scores of 0-4 indicating no generalised anxiety, 5-10 mild, 11-15 moderate, and 15-21 severe anxiety.

Results

Workshop Attendance

120 people expressed an interest in the CBT-I workshop by attending the introductory talk or completing the baseline assessment. Of these, 95 people (79%) attended the workshops. Follow-up data was collected from 64 people (66%).

Participant Demographics and Baseline Clinical Characteristics

A summary of the socio-demographic details of participants is given in Table 2. Independent t-tests and chi-square tests for independence were conducted to compare demographic details and clinical characteristics of those who provided follow-up data with those who did not, in order to discount the possibility of fundamental differences between these two groups. The only difference found was in age whereby the participants who provided follow-up data were older on average (mean age 45 years) than those who did not (mean age 40 years; $t(84) = 2.12$, $p=0.04$).

All subsequent analyses are completed with only those participants for whom follow-up data were collected.

Approximately two thirds of the group were female, with a wide age range from 25 to 77 years. The majority of people were between ages 35 – 64 years. In terms of ethnicity, 70% of the participants reported their ethnicity as White with the next largest group being Black or Black British participants (approximately 16%). A small number of people were Asian or Asian British or Mixed, and approximately 10% of the group reported their ethnicity as 'Other' or chose not to disclose their ethnicity. The proportion of participants who were in either full-time or part-time employment was 67.2%.

Of those participants who attended the workshop, nearly two-thirds scored within the moderate to severe clinical insomnia range on the ISI. Over two-thirds reported

Table 2. Socio-demographic details of participants

		N	%
Gender	Male	21	32.8
	Female	43	67.2
Age	25-34	9	14.1
	35-44	20	31.3
	45-54	16	25.0
	55-64	10	15.6
	65-74	2	3.1
	75-84	1	1.6
	Missing	6	9.4
Ethnicity	White	45	70.3
	Mixed	1	1.6
	Asian or Asian British	2	3.1
	Black or Black British	10	15.6
	Other	1	1.6
	Missing	5	7.8
Employment status	Employed full time	27	42.2
	Employed part time	16	25.0
	Unemployed	10	15.6
	Full-time student	2	3.1
	Retired	6	9.4
	Full-time home maker or carer	1	1.6
	Missing	2	3.1

clinical symptoms of depression (PHQ-9 over 4) and over half reported clinical symptoms of anxiety (GAD-7 over 4), (see Table 3.).

Clinical effectiveness

Change in insomnia, depression and anxiety following the CBT-I workshop were examined using paired-samples t-tests. Table 3 provides details of baseline and follow-up scores, statistical tests and effect sizes.

A significant reduction in insomnia, as measured by the ISI, was found following the workshop with the mean score reducing from the moderate insomnia range to the sub-clinical level of insomnia range. According to Cohen's (28) interpretation of effect sizes (d=0.2 small, 0.5 medium, 0.8 large) the effect size was large (d=0.92). Both depression and anxiety significantly reduced following the workshop with effect sizes in the

and change in insomnia independent of the severity of the insomnia at baseline. No relationships were found between baseline depression (r=-.17, ns) or anxiety (r=.04, ns) and change in insomnia symptoms indicating that the severity of depression and anxiety did not impact on the effectiveness of the CBT-I workshop in reducing insomnia symptoms. T-tests were conducted to explore between-group differences between those who had accessed counselling or psychological help before and those who had not. There was a greater change in ISI score in those people who had not accessed this type of help previously (mean change = 7.47, n=15) than in those who had (mean change = 4.31, n=32), (t (45) = -1.95, p = .05) supporting the hypothesis that the possibility that the workshop was more beneficial in reducing insomnia for those people without previous experiences of counselling or psychological therapy.

Table 3. Baseline and follow-up ISI, PHQ-9 and GAD-7 scores, statistical tests and effect sizes.

	N	Baseline Mean (Standard Deviation)	Follow-up Mean (Standard Deviation)	t	p	Effect Size (Cohen's d)
Insomnia (ISI)	47	17.49 (5.81)	12.17 (5.74)	6.84	.000	0.92
Depression (PHQ-9)	61	9.39 (6.07)	7.22 (5.14)	3.60	.001	0.39
Anxiety (GAD-7)	61	8.59 (6.47)	6.16 (5.29)	3.75	.000	0.41

small to moderate (d=0.39; d=0.41) range.

Predictors of clinical effectiveness

Change in insomnia score (ISI change) was calculated by subtracting the follow-up ISI score from the baseline ISI score. A larger positive change score indicates greater reduction in insomnia symptoms. ISI change was positively correlated with ISI at baseline (r=.47, p=.001), indicating greater insomnia reduction in those with more severe insomnia at baseline. As a result baseline ISI was controlled for in the following analyses.

Partial correlations were conducted to examine the relationship between baseline depression and anxiety

Discussion

The main aim of this study was to evaluate the accessibility and clinical effectiveness of a series of large-scale one-day CBT-I workshops. The workshops proved to be accessible attracting people from a broad age range, employment status and ethnicity and who were demonstrating clinical levels of insomnia, depression or anxiety. The workshop was effective in reducing insomnia, with analyses indicating a large effect size, and was also effective at reducing both depression and anxiety with effect sizes in the mild to moderate range. A further aim was to explore the impact of factors indicating greater complexity or need, such as co-morbid depression or anxiety or receipt of previous treatment,

on the effectiveness of the CBT-I workshops. There was no significant impact of severity of depression or anxiety on reduction in insomnia symptoms following the workshop. However, people with no prior experience of counselling or psychological therapy benefitted more from the workshop, as indicated by greater reduction in insomnia symptoms, than those with prior experience.

Access to the workshop was good with 120 people expressing interest and just under 80% of these going on to attend the workshop. More women than men accessed the workshop, which may indicate the higher proportion of women affected by insomnia (29). The age range of people attending the workshop was broad with the majority of people falling between ages 35 and 65 years. The ethnicity of participants attending the workshop was mixed inline with the local population and most people were employed either full- or part-time. This finding is very encouraging as data suggests that services attract a lower proportion of people in employment (30), perhaps due to the inflexibility of services to see people outside of working hours. Likely factors contributing to the accessibility of the workshop include the provision of the workshop on a weekend day, as well as reducing potential stigma via the diagnosis-free labelling and marketing of the workshop, the neutral venues and access via self-referral. In spite of the broad accessibility of the workshop, which had no exclusion criteria, the people who accessed the workshop demonstrated a clinical need. Over two thirds reported clinical insomnia in the moderate to severe range, and two-thirds reported clinical levels of depression. In addition, over half of the sample reported clinical levels of generalised anxiety. The combination of accessibility of the workshop with evidence that participants had a genuine clinical need provides a good treatment model for future services aiming to promote access to psychological services by a wide variety of people who demonstrate a real clinical need.

Further support for the effectiveness of one-day CBT-I community workshops in reducing clinical levels of insomnia are provided by this study. On average, insomnia reduced from the moderate insomnia range to sub-clinical levels at four-week follow-up. This finding offers further support for the effective delivery of CBT-I in a one-day group workshop format (2, 3, 18). Greater reduction of insomnia symptoms was seen in those with more severe levels of insomnia at baseline, supporting the use of this format even with those individuals with more severe insomnia.

In addition, significant reductions in both depression and generalised anxiety were found following the workshop. Evidence has been presented for the additional benefit of individual CBT-I in treating depression (20, 22) and anxiety (20, 21). However, the impact of CBT-I delivered in a group workshop format on depression is less clear (2, 3, 18). No previous studies of the CBT-I workshop have reported levels of anxiety; therefore the finding of a moderate reduction in generalised anxiety symptoms is novel. CBT is an effective treatment for both depression and anxiety (see 31 for a review) and although the focus of the CBT-I workshop was on insomnia, the aim to identify and modify dysfunctional beliefs and attitudes and unhelpful behaviours is a universal principle of CBT and was possibly generalised by participants to their symptoms of depression and anxiety. Furthermore, insomnia, depression and anxiety are highly co-morbid (32) and a reduction in one is likely to have an impact on another if they are linked. It was not possible in the current study to establish whether insomnia was a primary problem, or whether it was secondary to depression or anxiety; however, the finding that symptoms of insomnia, depression and anxiety were all reduced is very positive and supports the benefit of this workshop in treatment of individuals with insomnia with comorbid depression or anxiety, and possibly those people for whom insomnia is secondary to depression or anxiety.

One of the aims of the current study was to explore the impact of factors indicating greater complexity or need, such as co-morbid depression or anxiety or receipt of previous treatment, on the effectiveness of the CBT-I workshops. No relationship was found between severity of either depression or anxiety at baseline and reduction in insomnia at four-week follow-up after the workshop suggesting that depression or anxiety did not reduce the benefits of the workshop in reducing insomnia. The finding that the CBT-I workshop is both accessible and effective at reducing symptoms of insomnia even in those individuals with more complex needs, such as greater severity of co-morbid depression and anxiety, is very positive. It implies that a relatively low intensity, and therefore more time- and cost-effective, treatment has broad-reaching benefits across a varied sample of the population in terms of age, gender, ethnic group and clinical severity and co-morbidity.

Another measure representing greater complexity of need was previous experience of counselling or psychological therapy. In the current study it was found that individuals who had no prior experience of counselling or psychological therapy benefitted more from the CBT-I workshop, in terms of reduction of insomnia, than those with prior experience of counselling or psychological therapy. A number of reasons could account for this finding including the possibility that those people who had already had counselling or psychological therapy in the past may not have gained additional benefit to that already gained previously, or had more severe or complex needs. Although previous experience of counselling or psychological therapy was assessed, the focus and timing of the therapy was not specified, and it is therefore difficult to generalise further about what factors might have caused the finding. Future research could explore factors such as the focus of prior psychological treatment or counselling, when it occurred, and whether it was beneficial in order to understand this finding better.

Some methodological weaknesses of the current study deserve consideration. There was no control group to compare findings against in order to establish whether the changes seen were due to attendance of the workshop (3) or another factor. Follow-up was conducted one month following the workshop, and it would have been of interest to know whether the changes in insomnia, depression and anxiety were maintained longitudinally. Evidence for the maintenance of improvement at two-years follow-up following a similar CBT workshop for depression has been reported (17) suggesting that the effects of workshops can be long-lasting. The CBT-I workshops took place in London and limited the sample to that of a relatively deprived inner-city community. It is not possible to say therefore whether the findings of this study would be generalisable to other populations; however, Swift and colleagues (3) found a significant reduction in insomnia following the CBT-I workshop across multiple sites suggesting the broader application of the workshop in different communities. Finally, due to the self-referral system and lack of exclusion criteria, the sample of individuals was self-selecting and heterogeneous. It was necessary to rely on self-report questionnaire measures of clinical symptoms and therefore it was not possible to determine whether insomnia was a primary disorder, or secondary to another disorder such as depression or anxiety. However, the fact that the workshop was effective at reducing insomnia, depression and anxiety irrespective of severity or primary diagnosis suggests that it is an effective treatment across a broad range of people and clinical need.

Conclusion

The current study has provided good evidence for the accessibility and application of one-day CBT-I workshops as an effective way to treat insomnia of varying severity as well as reducing co-morbid depression and anxiety across a wide range of people. This finding has broad implications for clinical practice given the current lack of

availability of evidence-based psychological treatment of insomnia. CBT-I workshops are appropriate for up to 30 people at one time, and present a time- and cost-effective way to effectively treat insomnia across a large volume of people. Given the frequency of insomnia difficulties in the population (4), and the cost of this in economic terms on society (5) this intervention represents an effective and accessible option that could be considered for wider application across healthcare services.

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References

1. Brown, J. S. L., Cochrane, R., & Hancox, T. (2000). Large scale stress management workshops for the general public: a controlled evaluation. *Behavioural and Cognitive Psychotherapy*, *28*, 139-151.
2. Prytys, M., Whittinger, N., Coventry, S., Idusohan, H., Brown, J. S. L. (2010). Psycho-educational CBT insomnia workshops for the general public: an audit of access and clinical outcomes. *Journal of Public Mental Health*, *9*(1), 8-15.
3. Swift, N., Stewart, R., Andiappan, M., Smith, A., Espie, C., & Brown, J. S. L. (2012). The effectiveness of community day-long CBT-I workshops for participants with insomnia symptoms: a randomised controlled trial. *Journal of Sleep Research*, *21*, 270-280.
4. Morphy, H., Dunn, K. M., Lewis, M., Boardman, H. F., & Croft, P. R., (2007). Epidemiology of insomnia: a longitudinal study in a UK population. *Sleep*, *30*, 274-280.
5. Daley, M., Morin, C. M., Leblanc, M., Gregoire, J.-P. & Savard, J. (2009). The economic burden of insomnia: direct and indirect costs for individuals with insomnia syndrome, insomnia symptoms, and good sleepers. *Sleep*, *32*, 55-64.
6. Morin, C. M., Colecchi, C., Stone, J., Sood, R., Brink, D. (1999). Behavioral and pharmacological therapies for late-life insomnia - A randomized controlled trial. *The Journal of the American Medical Association*, *281*, 991-999.
7. Morin, C. M., Bootzin, R.R., Buysse, D.J., Edinger, J.D., Espie, C.A., Lichstein, K.L. (2006a). Psychological and behavioral treatment of insomnia: Update of the recent evidence (1998-2004). *Sleep*, *29*, 1398-1414.
8. Jacobs, G. D., Pace-Schott, E. F., Stickgold, R. & Otto, M. W. (2004). Cognitive behavior therapy and pharmacotherapy for insomnia. A randomized controlled trial and direct comparison. *Archives of International Medicine*, *164*, 1888-1896.
9. Morin, C. M., Hauri, P.J., Espie, C.A., Spielman, A.J., Buysse, D.J., Bootzin, R.R. (1999). Nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine review. *Sleep*, *22*, 1134-1156.
10. Sivertsen, B., Omvik, S., Pallesen, S., Bjorvatn, B., Havik, O. E., Kvale, G., Nielsen, G. H., & Nordhus, I. H. (2006). Cognitive behavioral therapy v's zopiclone for treatment of chronic primary insomnia in older adults - A randomized controlled trial. *Journal of the American Medical Association*, *295*, 2851-2858.
11. Espie, C. A., Macmahon, K. M., Kelly, H. L., Broomfield, N. M., Douglas, N. J., Engleman, H. M., McKinstry, B., Morin, C. M., Walker, A., & Wilson, P. (2007). Randomized clinical effectiveness trial of nurse-administered small-group cognitive behavior therapy for persistent insomnia in general practice. *Sleep*, *30*, 574-584.
12. Morin, C. M., Leblanc, M., Daley, M., Gregoire, J. P. & Merette, C. (2006b). Epidemiology of insomnia:

- prevalence, self-help treatments, consultations, and determinants of help-seeking behaviors. *Sleep Medicine*, 7, 123-130.
13. Brown, J. S. L., Boardman, J., Whittenger, N., & Ashworth, M. (2010). Can a self-referral system help improve access to psychological treatments? *British Journal of General Practice*, 60, 365-371.14.
14. Stinson, K., Tang, N. K. Y. & Harvey, A. G. (2006). Barriers to treatment seeking in primary insomnia in the United Kingdom: a cross-sectional perspective. *Sleep*, 29, 1643-1646.
15. Brown, J. S. L., Elliott, S., Boardman, J., Ferns, J. & Morrison, J. (2004). Meeting the unmet need for depression services with psycho-educational self-confidence workshops: preliminary report. *British Journal of Psychiatry*, 185, 511-515.
16. Horrell, L., Goldsmith, K. A., Tylee, A. T., Schmidt, U. H., Murphy, C. L., Bonin, E. M., Beecham, J., Kelly, J., Raikundalia, S., & Brown, J. S. (2013). One-day cognitive-behavioural therapy self-confidence workshops for people with depression: randomised controlled trial. *British Journal of Psychiatry*, bjp.bp 112.121855.
17. Brown, J. S. L., Elliott, S., Boardman, J., Andiappan, M., Landau, S., & Howay, E. (2008). Can the effects of a 1-day CBT psychoeducational workshop on self-confidence be maintained after 2 years? A naturalistic study. *Depression and Anxiety*, 25, 632-40.
18. Archer, M., Brown, J. S. L., Idusohan, H., Coventry, S., Manoharan, A., & Espie, C. (2009). The development and evaluation of a large-scale self-referral CBT-I intervention for men who have insomnia: An exploratory study. *Behavioural and Cognitive Psychotherapy*, 37, 239-248.
19. Espie, C. A. (2009). "Stepped care": a health technology solution for delivering cognitive behavioral therapy as a first line insomnia treatment. *Sleep*, 32(12), 1549-1558.
20. Backhaus, J., Hohagen, F., Voderholzer, U., & Riemann, D. (2001). Long-term effectiveness of a short-term cognitive-behavioral group treatment for primary insomnia. *European Archives of Psychiatry and Clinical Neuroscience*, 251, 35-41.
21. Espie, C. A., Inglis, S. J., Tessier, S., & Harvey, L. (2001). The clinical effectiveness of cognitive behaviour therapy for chronic insomnia: implementation and evaluation of a sleep clinic in general medical practice. *Behaviour Research and Therapy*, 39, 45-60.
22. Manber, R., Edinger, J. D., Gress, J. L., Pedro-Salcedo, M. G. S., Kuo, T. F., & Kalista, T. (2008). Cognitive behavioral therapy for insomnia enhances depression outcome in patients with comorbid major depressive disorder and insomnia. *Sleep*, 31, 489-495.
23. Taylor, D. J., Lichstein, K. L., Weinstock, J., Sanford, S. & Temple, J. R. (2007). A pilot study of cognitive-behavioral therapy of insomnia in people with mild depression. *Behavioural Therapy*, 38, 49-57.
24. Morin, C. M. & Espie, C. A. (2003). *Insomnia: a clinical guide to assessment and treatment*. New York: Kluwer Academic/Plenum.
25. Bastien, C. H., Vallieres, A. & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep Medicine*, 2, 297-307.
26. Kroenke, K., Spitzer, R. L., & Williams, J. (2001). The PHQ-9. Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606-613.
27. Spitzer, R. L., Kroenke, K., Williams, J. B. & Lowe, B. (2006). A brief measure for assessing generalized

anxiety disorder: the GAD-7. *Archives of Internal Medicine*, 166(10), 1092-1097.

28. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ:Erlbaum.

29. Ohayon, M. M. (2002). Epidemiology of insomnia: what we know and what we still need to learn. *Sleep Medicine Reviews*, 6, 97-111.

30. Bebbington et al., 2000

31. Butler, A. C., Chapman, J. E., Forman, E. M. & Beck, A. T. (2006). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review*, 26(1), 17-31.

32. Ohayon, M. M. & Roth, T. (2003). Place of chronic insomnia in the course of depressive and anxiety disorders. *Journal of Psychiatric Research*, 37, 9-15.