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Invited essay

Group cognitive behavioural therapy for insomnia: Effects on sleep and depressive symptomatology in a sample with comorbidity

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ABSTRACT

Aim: To investigate the effects of group CBT for insomnia (CBT-I) on insomnia and depressive symptomatology in a comorbid sample through a randomised controlled trial with a 6 month follow-up.
Methods: 64 participants were recruited through advertisements and randomised to receive CBT-I or an active control (relaxation training: RT) during four group sessions. Insomnia Severity Index and BDI-II were the primary outcome measures, assessed pre-treatment, post-treatment and at 6 month follow-up. Insomnia and depressive diagnoses, and functional impairment were assessed before and after treatment, whereas sleep diary data was gathered continuously from one week before treatment until after treatment.
Results: CBT-I was more efficient than RT in reducing insomnia severity and equally effective in reducing depressive symptoms, although CBT-I was associated with a higher proportion of remitted persons than RT, regarding both insomnia and depression diagnoses. Also, CBT-I was associated with less functional impairment, shorter sleep onset latency and wake after sleep onset but both treatments had equal improvements of sleep quality, early morning awakenings and total sleep time.
Conclusion: Group CBT-I is an efficient form of insomnia-treatment for people with insomnia comorbid with depressive symptomatology. The mixed results regarding depression outcomes warrants replication and further studies into treatment mechanisms.

Insomnia and depression are disorders that often go together. Up to 20% of people with insomnia disorder also fulfil criteria for major depression (Ohayon, 2007) and for people with depression, 69% also report mild or moderate insomnia (Weyerer & Dilling, 1991). Insomnia disorder means difficulties in falling asleep, maintaining sleep, or waking up too early in the morning (American Psychiatric Association, 2013). For a diagnosis, the sleep problems must also be associated with distress or other daytime impairments. Studies have also shown that it is harder to treat depression when insomnia is present (Dew et al., 1997), and that there is a higher risk of a new depressive episode if insomnia remains (Dombrovski et al., 2008; Reynolds et al., 1997), which points to the importance of treating comorbid sleep problems of depressed patients. Further, longitudinal studies have showed that insomnia is a well-established risk factor to develop depression (for a review see Baglioni et al., 2011) and that more severe insomnia is associated with more severe depression (Sunderajan et al., 2010). Together these results indicate that it is important to treat sleep problems as they mark a higher risk for future depressive episodes.

Cognitive behavioural therapy for insomnia (CBT-I) is an evidence based treatment of insomnia and it has been successfully applied in several formats: individual therapy, group therapy, bibliotherapy, and internet therapy (e.g. Bastien, Morin, Quellet, Blais, & Bouchard, 2004; Lancee, van den Bout, van Straten, & Spoormaker, 2012). More recently the area has also expanded into testing brief CBT-I on insomnia comorbid with depressive symptomology. The results are promising, demonstrating an effect on both insomnia and depressive symptoms (Blom et al., 2015;

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Lancee et al., 2012; Manber et al., 2008; Maroti, Folkeson, Jansson-Fröjmark, & Linton, 2011; Taylor, Lichstein, Weinstock, Sanford, & Temple, 2007; Wagley, Rybarczyk, Nay, Danish, & Lund, 2013; Watanabe et al., 2011). Treatment gains from CBT-I do not seem to be hampered by depression severity (Lancee, van den Bout, van Straten, & Spoormaker, 2013; Manber et al., 2011), although more severe depressive symptoms may be a risk factor for early drop out from treatment (Ong, Kuo, & Manber, 2008). When compared with pharmacological treatments of insomnia, CBT-I is slower to have an effect (it takes a few weeks) but the effect is larger and longer lasting than the effect of pharmacological therapies, presumably because patients learn skills they can use to manage sleep at later times (Mitchell, Gehrman, Perlis, & Umscheid, 2012).

Six previous randomised controlled trials (RCT) have investigated the effect of CBT-I on both insomnia and depressive symptoms (Blom et al., 2015; Lancee et al., 2012; Manber et al., 2008; Vitiello, Rybarczyk, Von Korff, & Stepanski, 2009; Wagley et al., 2013; Watanabe et al., 2011). For details, see Table 1. In one study, the addition of individual CBT-I to pharmacological treatment meant a higher remission rate of both major depressive disorder and insomnia disorder as well as superior outcomes in actigraph and sleep diary measures (Manber et al., 2008). Unfortunately, this well-designed pilot did not allow for a follow-up measure. Longer-lasting effects of CBT-I were confirmed in later studies of brief(er) individual CBT-I. An outpatient sample of patients with remitted, mild or moderate depression, who had already tried two different pharmacological treatments for depression, received CBT-I as an addition to treatment as usual (TAU) or TAU alone (Watanabe et al., 2011). The addition of CBT-I was associated with less severe insomnia, more sleep efficiency, and higher remission of both insomnia and depression. However, the follow-up measure was conducted only 4 weeks after the intervention and although sleep diaries were used for CBT-I these were not presented as outcomes. In a second study of brief individual CBT-I, the effects of CBT-I as an addition to TAU was tested on a sample of outpatients with low sleep quality and depressive symptoms (Wagley et al., 2013). Although those who had received CBT-I reported better sleep and less depressive symptoms after treatment, no between group effects could be demonstrated. Sleep diary data was not collected and the follow-ups were relatively short at 4 and 8 weeks after treatment.

Internet CBT-I has shown promising results for short-term and

Table 1
Summary of randomised controlled trials investigating the impact of CBT-I on insomnia and depressive symptomologies.

Author	N	Population	Treatment form/sessions/duration	Control	Measures before treatment	Outcome measures	Results
Blom et al. (2015)	43	Volunteers from ads, clinic website & primary care with insomnia & depression diagnoses.	Internet CBT for insomnia/9 modules/9 weeks	CBT for depression/9 modules/9 weeks	ESS, ISI, MADRS-S, SCID-I, sleep diary	Shortened version of ISI, depression subscale from HADS, clinical assessment by psychiatrist	CBT-I superior in reducing insomnia post treatment and at follow-up. Both treatments equally effective in reducing depressive symptomatology. More remission from insomnia after CBT-I. No difference between treatments in remission from depression.
Lancee et al. (2012)	623	Volunteers from insomnia website with insomnia symptomatology.	CBT-I through unsupported internet or pen and paper/6 modules/6 weeks	Waitlist	CES-D, Sleep diary, SLEEP-50 (insomnia subscale)	CES-D, Sleep diary, SLEEP-50 (insomnia subscale)	CBT-I treatments superior in reducing insomnia and depressive symptomatology.
Manber et al. (2008)	30	Volunteers from ads with insomnia & depression diagnoses.	Escitalopram + individual CBT-I/7 sessions/12 weeks	Escitalopram + Desensitisation therapy/7 sessions/12 weeks	Actigraphy, DSISD, HRSD, ISI, SCID-I, sleep diary	Actigraphy, HRSD, ISI, SCID-I, sleep diary	Escitalopram + CBT-I superior on most post treatment sleep measures and had a greater proportion of remission from depression. The latter not statistically supported.
Vitiello et al. (2009)	51	Paid volunteers from a variety of contexts with osteoarthritis diagnoses & insomnia symptomology.	Group CBT-I/8 classes/8 weeks	Group "Stress Management and Wellness"/8 classes/8 weeks	GDS, PSG, sleep diary	GDS, sleep diary	CBT-I superior on sleep measures post treatment and at follow-up. No change on depressive symptomology.
Wagley et al. (2013)	39	Volunteer psychiatric outpatients with insomnia & depressive symptomologies.	Individual CBT-I/2 sessions & 1 phone call + TAU/2 weeks	TAU	PHQ-9, PSQI	PHQ-9, PSQI	CBT-I associated with post treatment improvements on sleep and depressive symptomology, whilst TAU was unchanged. No group differences on sleep measures. CBT-I superior in reducing depressive symptomology at 4 week follow-up.
Watanabe et al. (2011)	37	Volunteer patients from 3 outpatient clinics with insomnia symptomology & treatment resistant MDD.	Individual CBT-I + TAU/4 sessions/4 weeks	TAU	GRID-HAMD, ISI, SCID	GRID-HAMD, ISI	CBT-I + TAU superior in reducing insomnia and depressive symptomology post treatment and at follow-up

Note. The measures included in the table pertain only to sleep and depression. BDI-II = Beck Depression Inventory – Second edition; CES-D = Centre for Epidemiologic Studies Depression Scale; DSISD = Duke Structured Interview for Sleep Disorders; ESS = Epworth Sleepiness Scale; GDS = Geriatric Depression Scale; GRID-HAMD = Hamilton Depression Rating Scale with standardized scoring instructions; HADS = Hospital Anxiety and Depression Scale; HRSD = Hamilton Rating Scale for Depression; ISI = the Insomnia Severity Index; MADRS-S = Montgomery–Åsberg Depression Rating Scale Self-rated; MDD = Major depressive disorder; PHQ-9 = Patient Health Questionnaire – Depression subscale; PSG = Polysomnography; PSQI = Pittsburgh Sleep Quality Index; SCID-I = Structured Clinical Interview for DSM-IV axis I disorders; SII = Sleep Impairment Index; TAU = Treatment as usual.