Cognitive behavioural therapy for primary insomnia: a systematic review
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CRD summary
This review concluded that multifaceted cognitive-behavioural therapy for persistent primary insomnia is superior to single-component or other control treatment, but the relative efficacy and clinical usefulness remain uncertain and further research is required. In view of the poor reporting and limitations of the review methods, the conclusions about efficacy should be regarded with some caution.

Authors' objectives
To evaluate the efficacy of cognitive-behavioural therapy (CBT) for persistent primary insomnia.

Searching
MEDLINE, PsycINFO, PsycARTICLES, CINAHL and EMBASE were searched for studies published in the English language between 1993 and 2004; the search terms were reported.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review. The duration of follow-up in the included studies ranged from 1 month to 2 years.

Specific interventions included in the review
Studies investigating the effects of multifaceted CBT, including sleep scheduling, progressive muscle relaxation, sleep hygiene education and/or cognitive reconstructions, were eligible for inclusion; non-pharmacological treatments directly targeting circadian rhythms, white noise, acupuncture and exercise were excluded. Most of the included studies incorporated stimulus control and sleep hygiene; others employed cognitive reconstruction, a relaxation training, or an abbreviated format of CBT. Some studies also provided the participants with further material. Most treatments were delivered on an individual basis, in sessions lasting between 30 and 60 minutes weekly for between 6 and 10 weeks. All but one intervention (that was nurse-directed) were provided by a psychiatrist. The control interventions in the included studies were placebo, waiting list, single-component treatment group or pharmacological treatment.

Participants included in the review
Studies on adults between 18 and 65 years with primary insomnia (psycho-physiological insomnia according to DSM-IV, ICSD-R or ICD-10) were eligible; patients with other sleep disorders, such as circadian rhythm sleep disorder, periodic limb movements in sleep, severe medical or psychiatric conditions and substance use disorders, were excluded. The diagnosis of the participants in the included studies was established through structured interviews, self-report measures of insomnia, polysomnography, published checklists and laboratory tests. The mean age of the participants ranged from 36 to 65 years and more than half were female. The mean duration of symptoms, where reported, was more than 10 years.

Outcomes assessed in the review
The studies had to report sleep onset latency, number or duration of awakenings after sleep onset, sleep efficiency, sleep quality, beliefs and attitudes about sleep, or medication reduction to be eligible. The included studies primarily assessed sleep onset latency, wake time after sleep onset, sleep efficiency, total sleep time, total wake time and general sleep quality. All of the included studies measured sleep outcomes using daily sleep diaries; some studies also used established questionnaires.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.
Assessment of study quality
The studies were assessed using the Jadad scale and those scoring 2 or more (out of a possible 5) were eligible for inclusion. The authors did not state how the validity assessment was performed.

Data extraction
Three reviewers independently extracted the data, including details of the therapy components and measurement instruments. Baseline and end point values were extracted for outcomes of interest for each treatment group, together with levels of statistical significance of treatment differences or changes from baseline.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Differences between the studies were highlighted in the narrative synthesis.

Results of the review
Seven RCTs (n=396) were included in the review. The sample size ranged from 10 to 139.

All studies showed benefits of CBT compared with a placebo or waiting-list group (4 studies), a stimulus control intervention (1 study), a self-monitoring approach (1 study) or sleep hygiene recommendations (1 study) in at least one outcome, such as improvement of sleep efficacy, sleep onset latency and wake after sleep onset or sleep medication use. The follow-up data obtained for some participants showed durable clinical changes in total sleep time and night-time wakefulness.

Authors' conclusions
CBT was superior to any single-component treatment, such as stimulus control, relaxation training, educational programmes or other control conditions, for the treatment of primary insomnia. However, it was not possible to determine the relative efficacy and clinical utility. Further research is required.

CRD commentary
The review question was clearly defined in terms of the study design and outcomes, but inclusion criteria for the participants and interventions were not clearly distinguishable from the characteristics of the included studies. The search was limited as it only covered an 11-year publication period and excluded unpublished relevant studies and studies published in languages other than English. This means that relevant studies might have been missed and that language and publication bias may have been introduced into the review. The reviewers undertook measures to reduce errors and bias in the data extraction, but such methods were not reported for the study selection and quality assessment processes. The validity of the included studies was assessed and a quality threshold was used, but the criteria were somewhat limited; this made it difficult to adequately evaluate study quality and hence the reliability of the results. It was not reported whether the data were extracted on an intention-to-treat basis and the influence on the results of study quality and drop-outs was not assessed (drop-out rates ranged from 10 to 46% and might have influenced the results). The use of a narrative synthesis was justified given the heterogeneity of the included studies. In view of the limitations highlighted, the conclusion has to be regarded with some caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that the participants' emotional and physical states need to be carefully assessed to avoid the influence of non-specific effects; that insomnia subtypes need to be identified and the relationship between
treatment ingredients and different subtypes examined; that the efficacy of CBT programmes led by primary care providers with different educational and professional backgrounds needs examination; that patient characteristics that predict satisfactory outcomes from self-help treatments need to be identified in prospective studies; and that treatment adherence needs further investigation.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.