

Title:	Nonpharmacological Treatments of Insomnia for Long-Term Painful Conditions: A Systematic Review and Meta-analysis of Patient-Reported Outcomes in Randomized Controlled Trials
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Abstract:

Study Objectives: Insomnia is a debilitating comorbidity of chronic pain. This study evaluated the effect of nonpharmacological sleep treatments on patient-reported sleep quality, pain, and well-being in people with long-term cancer and non-cancer (e.g., back pain, arthritis, fibromyalgia) pain conditions.

Design: We systematically searched Cochrane CENTRAL, MEDLINE, Embase, and PsychINFO for relevant studies. Search period was set to inception of these databases to March 2014. Studies were included if they were: original randomized controlled trials (RCTs); testing a nonpharmacological intervention; that targets sleep; in adults; with painful health conditions; that has a control group; includes a measure of sleep quality; and at least one other health and well-being outcome.

Measurement and Findings: Means and standard deviations of sleep quality, pain, fatigue, depression, anxiety, physical and psychological functioning were extracted for the sleep treatment and control groups at baseline, posttreatment and final follow-up. Methodological details concerning the treatment, participants, and study design were abstracted to guide heterogeneity and subgroup analyses. Eleven RCTs involving 1,066 participants (mean age 45–61 years) met the criteria for the meta-analysis. There was no systematic evidence of publication bias. Nonpharmacological sleep treatments in chronic pain patients were associated with a large improvement in sleep quality (standardized mean difference = 0.78, 95% Confidence Interval [0.42, 1.13]; $P < 0.001$), small reduction in pain (0.18 [0, 0.36] $P < 0.05$), and moderate improvement in fatigue (0.38 [0.08, 0.69]; $P < 0.01$) at posttreatment. The effects on sleep quality and fatigue were maintained at follow-up (up to 1 year) when a moderate reduction in depression (0.31, [0.09, 0.53]; $P < 0.01$) was also observed. Both cancer and non-cancer pain patients benefited from nonpharmacological sleep treatments. Face-to-face treatments achieved better outcomes than those delivered over the phone/internet.

Conclusions: Although the body of evidence was small, nonpharmacological sleep interventions may represent a fruitful avenue for optimizing treatment outcomes in patients with chronic pain.

