Cognitive-behavior therapy for medically unexplained symptoms: a critical review of the treatment literature

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Authors' objectives
To review the existing literature regarding cognitive-behaviour therapy (CBT) for medically unexplained symptoms and three related disorders: chronic fatigue syndrome (CFS), fibromyalgia syndrome (FMS) and noncardiac chest pain (NCCP).

Searching
PsycLIT and MEDLINE were searched and the reference lists of retrieved articles were checked for additional citations. The search terms were reported.

Study selection

Study designs of evaluations included in the review
Studies of any design were eligible, providing an evaluation of the treatment application was reported.

Specific interventions included in the review
Studies of CBT used either alone or in addition to other strategies were eligible. The strategies used in the included studies were relaxation training, cognitive restructuring, cognitive coping, problem-solving training, assertiveness training, visualisation, use of behavioural experiments, graded increases in activity level, coping-skills training, education, biofeedback, exercise, noncardiac alternative explanations of chest pain, changing irrational beliefs, and breathing training.

The duration of sessions ranged from: six 40-minute group sessions to eight 3-hour group sessions for studies of medically unexplained symptoms; 30 to 60 minute out-patient interventions to 10 weeks of in-patient treatment for studies of CFS; nine sessions over 3 weeks to 14 weeks of tri-weekly intervention for studies of FMS; and 4 to 12 weeks for studies of NCCP.

Participants included in the review
Studies of patients diagnosed as experiencing either medically unexplained symptoms, CFS, FMS, or NCCP were eligible. Where reported, the age of the patients in the included studies ranged from 8 to 65 years.

Outcomes assessed in the review
Studies that included at least one quantitative measure were eligible.

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 authors rated each trial according to a hierarchy of study design, which differentiated between poor- and good-quality randomised studies. The studies were classified as one of the following: series of poorly controlled single-case studies; uncontrolled group design; randomised group design (well-described patients, at least one appropriate control group, well-articulated description of treatment, use of treatment manual); well-controlled randomised group design (as for randomised group with the inclusion of treatment integrity protocol and control for effects due to potential therapist bias). The lack of methodological rigour and the impact of this on the results was discussed. The authors did not state how the papers were assessed for quality, or how many reviewers performed the quality assessment.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The categories of data extracted included study design, participants, interventions and results. Effects size scores for physical symptoms and psychological distress were calculated for randomised group design studies that reported mean values and standard deviations for the relevant outcome measures.

**Methods of synthesis**

*How were the studies combined?*

The studies were combined in a mainly narrative synthesis, grouped according to the type of disorder. Pooled effect size scores were reported wherever possible.

*How were differences between studies investigated?*

Differences between the studies were discussed in the narrative.

**Results of the review**

Thirty-seven studies (n=1,759) were included: 19 randomised group studies, 12 uncontrolled group studies and 6 series of poorly controlled single-case studies.

CBT for medically unexplained symptoms: 9 studies (n=405) were identified (5 randomised group, 1 uncontrolled group, 3 series of poorly controlled single-case studies). Overall, CBT appeared to be effective for the reduction of a wide range of physical symptoms and associated mood disturbances, and it improved overall physical and social functioning. This general trend was found for all studies. Reductions in presenting problems were statistically significant (compared with the appropriate control groups) for randomised group design studies, with the exception of certain indices of psychological distress for patients in one study. Many of the studies found the positive effects to be maintained at the 6- or 12-month follow-up. The effect sizes for the four studies for which they were calculated ranged from 0.23 to 0.67 (mean 0.48) for physical symptoms, and from 0.01 to 0.72 (mean 0.39) for psychological distress. These ‘medium’ scores indicated that CBT was effective in this population.

CBT for CFS: 7 studies (n=303) were identified (3 randomised group, 2 uncontrolled group, 2 series of poorly controlled single-case studies). CBT appeared to be effective for persons with CFS. CBT resulted in significantly improved CFS symptoms, emotional distress, activity level and functional abilities. Positive results of CBT were reported in all studies with the exception of one randomised group study. Rehabilitative CBT interventions that focused on cognitive restructuring, gradual increases in activity, and problem-solving strategies (5 studies) resulted in more favourable outcomes than those that focused on 'accommodating' to the illness. There were no differences between out- and in-patient treatment. The effect sizes were calculated for one study (CBT versus relaxation training alone) and were 0.46 and 0.49 for physical symptoms and psychological distress, respectively.

CBT for FMS: 16 studies (n=861) were identified (7 randomised group, 8 uncontrolled group, 1 series of poorly controlled single-case studies). All the studies resulted in a significant decrease in certain psychological and/or physical symptoms, including improved quality of life, pain, tender points, physical condition, emotional distress and self-efficacy beliefs. However, with the exception of one study, these effects were not significant beyond educational protocols. The effect sizes for the three studies for which they were calculated ranged from 0.14 to 0.86 (mean 0.43) for physical symptoms, and from 0.03 to 0.62 (mean 0.38) for psychological distress, indicating that CBT was effective in this population.

CBT for NCCP: 5 studies (n=190) were identified (4 randomised group, 1 uncontrolled group). CBT was found to significantly decrease various deleterious symptoms in patients with NCCP. Specifically, treatment resulted in decreased chest pain, activity limitation, and emotional distress beyond that experienced by the control patients. Two studies reported a decrease in the use of certain medications following the intervention. A large number of patients reported no pain after CBT and the follow-up assessment indicated continued benefits. The effect sizes for the two studies for which they were calculated were 0.89 and 0.95 (mean 0.92) for physical symptoms, and 0.35 and 0.32 (mean 0.34) for psychological distress, indicating that CBT was effective in this population. The magnitude of these effect sizes strongly underscored the efficacy of CBT in this population.

Additional results were reported in the review.
Cost information
Yes. One study of CBT for medically unexplained symptoms found that group treatment led to a 52% net saving in costs due to the decrease in health care utilisation. Another study of CBT for FMS reported that the education-only group had significantly lower costs for direct health care, direct non-health care, and total direct costs per patient compared with the education and group discussion intervention, or cognitive therapy-plus-education treatment.

Authors’ conclusions
This review provided support for the efficacy of CBT for medically unexplained symptoms, CFS, FMS and NCCP, but it also identified a variety of methodological limitations regarding the included studies. Further research is warranted before the efficacy of CBT for these disorders can be established.

CRD commentary
The review aim was clearly set out and supported by a priori defined inclusion criteria. The search was somewhat limited as only two electronic databases were searched. In addition, there were no efforts to identify unpublished literature and it was unclear whether non-English language studies were sought. Relevant studies may therefore have been missed. While methodological issues relating to the included studies were discussed, there was no formal validity assessment. The studies were pooled appropriately in a narrative synthesis and grouped sensibly in the reporting of the results. No details relating to the review process, such as how the inclusion assessment and data extraction were carried out, were reported. Hence, it is not possible to determine whether steps were taken to minimise bias in this process. The authors’ conclusions appear justified based on the findings, but they should be viewed in light of the methodological limitations of the review.

Implications of the review for practice and research
Practice: The authors stated that CBT was found to be effective in significantly improving the medical status of the patients reviewed. However, the findings of the review do not provide unequivocal support for CBT in these indications.

Research: The authors stated that more research evaluating the efficacy of a wide range of CBT strategies is needed. Such research should include adequate control groups, use manualised protocols, include treatment integrity measures, use more multimodal assessment procedures for outcome measurement, and describe in detail the population under study. Research should delineate specific treatment strategies, and provide for an assessment of the specific impact of a particular intervention on a given hypothesised mechanism of action and its resulting impact on changes in physical symptoms. It should also identify important mediators and moderators of treatment efficacy, and identify important ‘mechanisms of action’. Research should try to identify effective means of enhancing maintenance effects, either through the application of certain intervention approaches or by varying certain features of a protocol. Finally, research should assess savings in health care costs related to CBT interventions, and should aim to improve treatment implementation and access.

Bibliographic details

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Record Status
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.