Group Cognitive Behavioral Treatment Improves Chronic Low Back Pain in a Cost-Effective Manner

Lamb SE, Hansen Z, Lall R, et al. Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. Lancet 2010;375:916–23.

Study Overview

Objective. To measure the clinical impact and cost-effectiveness of adding group cognitive behavioral treatment (CBT) to usual care for chronic low back pain in the primary care setting.

Design. Randomized, nonblinded, multcenter controlled trial.

Setting and participants. Subjects were men and women aged 18 years or older (mean age, 54 years) who were identified from consultation with family doctors or practice nurses or from searches of practice medical records (in 56 general practices in England) who had at least "moderately troublesome" subacute or chronic low back pain of at least 6 weeks' duration and had been seen in the practice for low back pain within the preceding 6 months. Potential subjects were excluded if their family doctor thought that they might have low back pain due to fracture, infection, or malignancy; if they had severe psychiatric disorders; or if they had previously participated in CBT for low back pain. Of 754 patients assessed for final eligibility, 701 were randomized to the group CBT intervention or usual care after receiving 15 minutes of active management advice (including instruction on exercise, avoidance of bed rest, analgesic medication use, and symptom management) and an instruction book.

Intervention. The CBT intervention consisted of an initial 90-minute individual assessment and six 90-minute sessions of group CBT, which targeted behaviors and beliefs about physical activity. Each group CBT session included a mean of 8 subjects, and each session was led by a physiotherapist, nurse, psychologist, or occupational therapist who had received 2 days of training in delivering the CBT intervention.

Main outcome measures. The primary outcomes were scores on the Roland Morris back pain disability questionnaire and the modified Von Korrf scale, which separately measures pain and disability. These outcomes were assessed via mailed questionnaires. Secondary outcomes were mental and physical health-related quality of life scores on the 12-item short-form health survey (SF-12), fear-avoidance beliefs questionnaire scores, and pain self-efficacy scale scores. Costs included the direct costs of the intervention as well as all other health care costs attributable to low back pain.

Main results. Among randomized patients, the mean duration of low back pain (ie, time since first onset) was 13 years. Twelve-month outcomes data were available for 85% of patients in both study arms. At 12 months, patients receiving the group CBT intervention had a mean 2.4-point improvement in Roland Morris score compared with a mean 1.1-point improvement among patients receiving usual care ($P < 0.001$). Von Korrf pain and disability scores also improved by a greater amount with group CBT than with usual care: for pain, 13.4% vs. 6.4% ($P < 0.001$); for disability, 13.8% vs. 5.4% ($P < 0.001$). Compared with usual care, group CBT was

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also associated with statistically significantly better improvement in fear-avoidance beliefs, pain self-efficacy, and SF-12 physical scores at 12 months; however, there were no significant differences between study arms on SF-12 mental scale scores. The calculated incremental cost per quality-adjusted life year associated with CBT was £1768 ($2650).

Conclusion. Compared with usual care, treatment with group CBT in the primary care setting was associated with greater improvements in symptoms of chronic low back pain at 12 months. Whether these symptomatic improvements can be sustained for longer periods of time is unclear, and whether these improvements correspond to functional advances (eg, returning to work) is unknown.

Commentary

Chronic low back pain is a common health problem that, despite existent guidelines for treatment, accounts for a high global burden of chronic disability [1]. The psychosocial contribution to this condition is felt to be significant, but prior treatment interventions that included CBT have shown inconsistent results in follow-up assessments after more than 6 months [2–4]. In addition, the costs of delivering individual CBT can be substantial, and group CBT offers a potentially more economical treatment modality.

The current study by Lamb and colleagues investigates the benefits of group CBT delivered to ambulatory patients with chronic low back pain of 13 years' mean duration. Compared with usual care, group CBT resulted in significantly greater improvements at 12 months in Roland Morris pain disability scores and modified Von Korff scales of pain and disability as well as secondary questionnaire-based measures of fear-avoidance beliefs, pain self-efficacy, and health-related quality of life. While only 63% of subjects randomized to the group CBT intervention actually met criteria for being compliant with CBT treatment (ie, attendance of the initial evaluation plus at least 3 subsequent group CBT sessions), group CBT was well-tolerated, with no reported adverse events. In addition, the intent-to-treat design of the analysis implies that the effectiveness of group CBT may be greater among patients who are compliant with therapy. Finally, the group CBT intervention was associated with an estimated incremental cost per quality-adjusted life year of £1768, well below the threshold considered acceptable for other health care services (especially in the United States).

This study has limitations. The criteria for recruiting patients into the study are not clearly described and were also nonuniform, with some patients recruited via record review and others recruited during physician consultations. While the outcomes measures employed in the study consist of well-regarded questionnaire-based instruments, no objective evaluations of functional or social limitation were performed. For example, approximately 10% of patients reported inability to work at baseline, and it is unclear whether among these patients group CBT was associated with higher rates of return to employment. Given the 13-year average history of low back pain among the study patients, the 12-month timeframe for assessment may still be incongruous; a longer follow-up would allow measurement of the average duration of effect for group CBT. Finally, cost calculations excluded costs to the patient such as the time and transportation costs associated with attending group CBT sessions.

Applications for Clinical Practice

The findings presented in this study suggest that group CBT can be an effective and financially attractive option for treating chronic low back pain, a common and vexing clinical problem. In combination with other noninvasive approaches, group CBT may become a key component to treating this common and frequently disabling condition. Decision makers may consider offering or otherwise facilitating group CBT prior to pursuing more invasive, risky, and expensive treatment options.

—Review by Mark W. Friedberg, MD, MPP

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