Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
This study examined the cost-effectiveness of a group cognitive-behavioural intervention for adults to manage at least moderately troublesome subacute and chronic low-back pain. The authors concluded that, over one year, the cognitive-behavioural intervention provided value-for-money from the perspective of the health care system. The methods were robust and well reported, enhancing the validity of the authors' conclusions.

Type of economic evaluation
Cost-utility analysis

Study objective
This study examined the cost-effectiveness of a group cognitive-behavioural intervention for adults to manage at least moderately troublesome subacute and chronic low-back pain.

Interventions
The group cognitive-behavioural intervention was added to best practice advice and was compared with this advice alone. Best practice advice consisted of a 15-minute session of advice on the benefits of being active and how to remain active, the avoidance of bed rest, the appropriate use of pain medication, and symptom management. The cognitive-behavioural intervention consisted of an individual assessment of up to 1.5 hours plus six sessions of group therapy, lasting 1.5 hours each. This focused on the patient's beliefs about physical activity and the avoidance of activity. Physiotherapists, nurses, psychologists, and occupational therapists were trained to deliver the programme.

Location/setting
UK/primary care.

Methods
Analytical approach:
The analysis was based on a single study, with a one-year horizon. The authors stated that the perspective of the health care system, the UK National Health Service (NHS), was adopted.

Effectiveness data:
The clinical data came from a pragmatic, multi-centre, assessor-blinded, randomised controlled trial (RCT), with 468 patients in the intervention group and 233 in the control group. Eligible patients were recruited from 56 general practices. Their mean age was 54 years (61% females) in the control group and 53 years (59% females) in the intervention group. The length of follow-up was 12 months and the primary endpoints were changes in the Roland Morris disability questionnaire score and in the modified Von Korff score. These outcomes were collected by postal questionnaires at three, six, and 12 months. Follow-up data were available for 85% of patients in both groups at 12 months.

Monetary benefit and utility valuations:
The utility values were from the Short Form (SF-12) Health Survey delivered to patients in the clinical trials and then converted, using the European Quality of life (EQ-5D) questionnaire.

Measure of benefit:
Quality-adjusted life-years (QALYs) were the summary benefit measure.

Cost data:
The economic analysis included the intervention costs (salaries, training, consumables, equipment, travel, and space for treatment) and the health care costs attributable to low-back pain (primary and secondary care consultations, emergency department attendances, hospital admissions, diagnostics, other treatments, medications, prescriptions, out-of-pocket expenses, other products, and devices). These costs were from NHS sources. The consumption of health care resources was based on reports from 70% of patients in the trial. All costs were in UK pounds sterling (£) and the price year was 2008.

Analysis of uncertainty:
A cost-effectiveness acceptability curve was constructed to determine the probability that the intervention was cost-effective at various thresholds.

Results
There was a statistically significant greater improvement in all primary outcomes for the cognitive-behavioural intervention group compared with the control group. The additional QALY benefit was 0.099 per patient, with the intervention. The mean cost per patient was £16.32 in the control group and £187 in the intervention group. The cost difference was almost entirely attributable to the cost of the cognitive-behavioural intervention.

The incremental cost per QALY gained with the intervention was £1,786 and the probability of it being cost-effective was 90% at a threshold of £3,000 per QALY gained. This probability remained stable at higher thresholds.

Authors' conclusions
The authors concluded that, over one year, the cognitive-behavioural intervention provided value-for-money, from the perspective of the health care system.

CRD commentary
Interventions:
The choice of the interventions was clear and justified. The authors stated that several studies had tried to assess the benefits of cognitive-behavioural interventions for low-back pain, but most of them had been inconclusive.

Effectiveness/benefits:
The clinical part of the study was well carried out. The trial design should ensure the validity of the clinical data. The intention-to-treat analysis, masking, stratified randomisation, power calculations, and the multi-centre design of the trial add to the reliability of the data. Patients lost to follow-up (15% of the whole sample) did not differ, from those who provided complete data, in their baseline characteristics. The potential impact of confounding factors was considered in a random-effects linear regression adjusted for age, sex, centre, severity of back pain, baseline value, and clustering. These features make the clinical data robust. The benefit measure was appropriate as the disease has a big impact on a patient's quality of life. The utility values were appropriately measured using the same patients as those in the clinical analysis.

Costs:
The cost categories were consistent with the perspective. The resource use was fully described, in an appendix, and this increases the transparency of the analysis. Resource use was from the clinical trial and this should have ensured that detailed information was used. A statistical analysis of the costs was conducted and the price year was reported. There was no need for discounting, as the time horizon was one year.

Analysis and results:
The study results were clearly reported, but more emphasis was given to the clinical data. An incremental analysis was appropriately undertaken to synthesise the costs and QALYs. The investigation of uncertainty was restricted to cost-effectiveness acceptability curves and the methods were not described, but it is likely that bootstrapping was conducted. The study results should be considered to be specific to the UK.
Note: Since this abstract was written a Health Technology Assessment (HTA) report has been published in which a much more detailed account of the research in the Lancet paper can be found. In particular there is a full description of the economic side of the study with details of the extensive sensitivity analyses that were carried out. The bibliographic details of the HTA report, and a live link to the report itself, can be found in 'Other Publications of Related Interest' below.

Concluding remarks:
The methods were robust and well reported, enhancing the validity of the authors’ conclusions.

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