A 5-year follow-up evaluation of the health and economic consequences of an early cognitive behavioral intervention for back pain: a randomized, controlled trial

Linton S J, Nordin E

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.

Health technology
The use of cognitive-behavioural therapy (CBT) for the management of back pain. CBT comprised six sessions involving problem-solving, risk analysis, activity scheduling and other coping skills.

Type of intervention
Treatment.

Economic study type
Cost-utility analysis.

Study population
The study population comprised people with back pain. No further inclusion or exclusion criteria were reported.

Setting
The setting was secondary care. The economic study was carried out in Sweden.

Dates to which data relate
The dates to which the effectiveness and resource use data referred were not reported. The price year was 2002.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The resource use data were collected retrospectively from the same sample that provided the clinical effectiveness data.

Study sample
This study was a continuation of a trial that followed up patients for one year (Linton et al. 2000, see 'Other Publications of Related Interest' below for bibliographic details). No details of the initial sample selection were included in this paper but, of the original study group, addresses were sought for 213 individuals (88%). No sample size or power calculations were reported in this paper. Of the sample of 213 individuals, 209 were invited to participate and 202 replied (97%). There were 87 participants in the CBT group and 115 in the information group. The average age of the participants was 49 years and 70% were women.

Study design
The original trial was a single-centred, randomised controlled trial. Details of the randomised methods were not reported, although more detail can be found in the parent study (Linton et al. 2000). Patients were traced and were followed up for 4 years after the end of the original trial (5 years after the start of the trial).

Analysis of effectiveness
The analysis of effectiveness data appears to have been per-protocol. The primary health outcomes assessed were:

- the average, worst and past-week self-reported pain (on a scale of 0 to 10);
- limitations to daily activities (on a scale 0 to 60);
- medication and health care use; work
- disability; and
- quality of life (measured by the SF-36).

It was reported that the two patient groups were shown to be comparable at the start of the trial (Linton et al. 2000).

Effectiveness results
The average back pain score over the past 3 months was 3.69 for the CBT group compared with 4.28 for the information group, (p=0.05).

Worst back pain was lower in the CBT group than in the information group (5.10 versus 6.01; p=0.01).

There was no statistical difference in pain during the past week between the two groups (3.82 in the CBT group versus 4.04 in the information group; p=0.63).

SF-36 function scores were higher in the CBT group than in the information group (2.17 versus 1.66; p=0.001).

The number of medication doses per week was lower in the CBT group than in the information group (0.99 versus 1.58; p=0.04).

Patients in the CBT group reported less sick leave than the information group, (p<0.04).

Clinical conclusions
The authors concluded that CBT was effective when used to treat back pain.

Measure of benefits used in the economic analysis
The health benefits were not synthesised with the cost data. Therefore, in effect, a cost-consequences analysis was undertaken. The authors used the EQ5-D to elicit health-related quality of life but, although these values were reported graphically in the paper, they were not used as a summary measure of benefit.

Direct costs
The direct costs of the health care provider were included in the study. The resource use and cost data provided for the interventions appear to have been taken from administrative data. Health care resource use data were derived from the patient sample, while the unit costs of health care services were derived from standard unit costs in the National Department of Health and Welfare Yearbook. The price year was 2002.

Statistical analysis of costs
The difference in costs between the two patients groups was tested using non-parametric tests.

**Indirect Costs**
The indirect costs of lost productivity were identified and included in the study. The resource use data (sick leave) were taken from the same patient sample that provided the clinical effectiveness evidence. Salary costs were estimated using data from Statistics Sweden. The price year was 2002.

**Currency**
Swedish kroner (SEK).

**Sensitivity analysis**
No sensitivity analysis was undertaken.

**Estimated benefits used in the economic analysis**
Not relevant.

**Cost results**
The total yearly cost was SEK 16,514 per person for the CBT group compared with SEK 45,990 for the information group, (p=0.06).

**Synthesis of costs and benefits**
Not relevant.

**Authors' conclusions**
Cognitive-behavioural therapy (CBT) results in long-term health and economic benefits.

**CRD COMMENTARY - Selection of comparators**
The study compared the treatment of back pain with CBT with the provision of information to patients. This comparator was chosen as it represented usual practice in the authors' setting. This was not the only potential comparator intervention, thus you should consider how these treatments compare with usual practice in your own setting before applying the results of this study.

**Validity of estimate of measure of effectiveness**
The clinical effectiveness data were derived from an extension of a randomised controlled trial, which was an appropriate study design. The analysis appears to have been undertaken on a treatment completers only basis. Few details of the initial trial were provided in this paper, which means that it was difficult to assess its quality and hence the quality of the follow-on study. The authors did not compare the characteristics of their patient sample with the wider patient population, therefore it is not possible to comment on whether or not it was representative. These factors may limit the internal validity of the study findings.

**Validity of estimate of measure of benefit**
No measure of health benefit was combined with the economic data. The reader is referred to the comments in the 'Validity of estimate of measure of effectiveness' field (above).
Validity of estimate of costs
It would appear that a societal perspective was adopted in this study. As such, all the appropriate costs appear to have been identified. Some resource use data were included in the paper but no unit costs were stated. In addition, it was not clear whether future costs were discounted. These factors limit the scope for generalising the study findings to other settings. The differences between the types of cost included in this study were tested using an appropriate statistical test. A clear price year was stated, which will facilitate future reflation exercises.

Other issues
The authors do not appear to have presented their results selectively and their conclusion reflected the scope of their analysis. They did not compare their findings with those from similar studies, or consider how their results could be generalised to other settings.

Implications of the study
The authors did not make any recommendations for further research or changes to practice.

Source of funding
None stated.

Bibliographic details

PubMedID
16622371

DOI
10.1097/01.brs.0000209258.42037.02

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Back Pain /economics /psychology /therapy; Cognitive Therapy /economics; Female; Follow-Up Studies; Humans; Male; Middle Aged; Pain Measurement /economics

AccessionNumber
22006000976

Date bibliographic record published
30/11/2006

Date abstract record published
30/11/2006