Health economic assessment of behavioural rehabilitation in chronic low back pain: a randomised clinical trial


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
Behavioural rehabilitation programmes of chronic low back pain: OPCON (operant programme with cognitive programme/relaxation), OPDIM (operant programme with a group discussion treatment) and USUAL (operant rehabilitation as usual).

Type of intervention
Rehabilitation.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with chronic low back pain, of whom 65% were female, with mean age of 39.8 years, and an average duration of pain since onset of 9 years and 10 months. Most subjects (78%) had less than 10 years of education and 79% received a work disability payment.

Setting
The setting was a rehabilitation centre (combined in-patient and out-patient care). The study was carried out in Hoensbroek, the Netherlands.

Dates to which data relate
The dates for the effectiveness and the resource use data were not reported. 1993 prices were used.

Source of effectiveness data
The evidence for effectiveness was derived from a single study.

Link between effectiveness and cost data
The costing was undertaken prospectively on the same patient sample as that used in the effectiveness study.

Study sample
Initially, a total of 237 patients were selected to participate in the study. Of these, 62 (26.2%) did not fulfil the inclusion criteria and 27 did not wish to participate. A total of 148 patients were randomly allocated, by a blinded researcher, to one of the three groups: 59 to the OPCON group, 58 to the OPDIM group and 31 to the WLC/USUAL group. The use of power calculations to determine the sample size was not reported.
Study design
The study was a single-centre randomized controlled trial. The duration of follow-up was 12 months after completing the treatment. During the follow-up 41 (27.7%) patients dropped out, and these were unequally distributed between the treatment groups (24% for OPCON, 24% OPDIM, and 43% for USUAL). For the WLC group the attrition rate was 3%. This group was followed-up for 8 weeks only.

Analysis of effectiveness
The analysis of effectiveness was based on treatment completers only. The primary health outcomes were health state utilities and a measure of global assessment of change (percentage of patients who evaluate the change in their health state). Patients’ functional status was assessed using the Maastricht Utility Measurement Questionnaire which consists of 5-point scales for 6 dimensions. Utility values for health states were obtained by applying the rating scale (0= death, 100=perfect health) and the standard gamble methods. Groups were comparable in terms of age, sex, educational level and clinical characteristics.

Effectiveness results
Immediately after treatment (8 weeks) the patients in OPCON and OPDIM valued their own health state significantly higher on the rating scale compared to the no-treatment condition (WLC) (for OPCON versus WLC: 95% CI: 7.85-24.18, for OPDIM vs. WLC : 95% CI=7.68-24.27). There were no significant differences between OPCON and OPDIMand between both (OPCON and OPDIM) and USUAL, either immediately after treatment or after 6 and 12 months. For the standard gamble utilities there were no differences between the three groups. According to the global assessment of change results after 8 weeks there was a significant difference between the programme groups and the WLC group in the percentage of patients who reported their health state as improved (p=0.000). There was no significant difference between the treatment groups in the self assessed change from the baseline.

Clinical conclusions
The operant treatment, as included in both OPCON and OPDIM, is more effective in improving utilities than providing no intervention at all (as in WLC), but is not significantly better than the USUAL treatment program.

Measure of benefits used in the economic analysis
No difference was found in health state utilities between the three treatment groups, and hence, the economic analysis was based on costs only.

Direct costs
No discounting was required since the study period was only 1 year. The direct health care costs included costs of OPCON, OPDIM and USUAL programmes and the economic consequences of the programmes in terms of changes in subsequent health care utilization, e.g. costs of additional therapies, drug use and hospitalisations, and visits to health care providers (general practitioner, specialist, physiotherapist, alternative medicine). The direct non-health care costs included out-of pocket expenses, costs of paid and unpaid help, and travel costs for attending or visiting a back pain treatment programme. The resource use data for treatment programmes were obtained from the financial department of the rehabilitation centre, time schedules completed by the therapists, and the therapy protocols. The other direct costs were obtained from patient-cost diaries (medical consumption). Aweighted average of social and private insurance charges, Dutch pharmacy prices, and patients’ reports were used to value the resources. Costs and quantities were reported separately. 1993 price data were used.

Statistical analysis of costs
The costs were treated in a stochastic way. Multiple regression analysis was used to test the differences in costs and in the utilities.
Indirect Costs
Discounting was not required due to the short study period (1 year). Quantities and costs were reported separately. The calculation of indirect costs was based on the number of days absent from work and the days lost from housekeeping as recorded in the patient's cost diary. Two methods were used to calculate indirect costs: the Human Capital Approach and the Friction Cost Approach. The lost activity working days were valued using the national average gross hourly wage rate. 1993 price data were used.

Currency
US dollars ($). Values were originally estimated in Dutch guilders (Dfl) and were converted into US dollars at the 1993 GDP-based Purchasing Power Parities rate (PPP) of 2.134 : 1

Sensitivity analysis
Sensitivity analysis was not carried out.

Estimated benefits used in the economic analysis
Not applicable.

Cost results
The cost results for OPCON, OPDIM and USUAL were:
- Total programme costs per patient (over 1 year): $9,196.06, $8,606.66 and $8,667.26
- Other direct health care costs: $1,088, $575 and $651.
- Total direct non-health care costs: $2,316, $1,544 and $1,641
- Mean indirect costs (Human Capital approach): $65,22, $5,938 and $8,213.

Synthesis of costs and benefits
Not applicable.

Authors’ conclusions
The authors concluded that "...the addition of a cognitive/relaxation therapy to an operant therapy as evaluated (in this study) resulted in higher costs and no substantial surplus effects”.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used. All the programmes analysed were common treatments used in behavioural rehabilitation programmes of chronic lower back pain. The operant treatment alone (USUAL) is a standard component in similar programmes. You, as a user of this database, should consider whether there are widely used technologies in your setting.

Validity of estimate of measure of effectiveness
The evidence for effectiveness was based on the results of a randomised controlled trial, and hence, is likely to be internally valid. However, the differential attrition may have reduced the comparability of groups in the study and resulted in inadequate power.

Validity of estimate of costs
Information about sources of costs and methods used was reported in adequate detail. Resource quantities were
reported separately from costs.

**Other issues**
The authors' conclusions seem to be justified. However, it should be noted that the lack of power arising from differential attrition may have degraded the ability of the study to detect difference in health state utilities, especially between the interventions (OPCON, OPDIM) and the comparator (USUAL).

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**Bibliographic details**

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9541083

**Other publications of related interest**
The details of the clinical study were reported in a paper which had been submitted for publication to an unnamed journal: Kole-Snijders, A M J et al. The effectiveness of cognitive treatment and relaxation added to an operant treatment for chronic low back pain.

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Analysis of Variance; Behavior Therapy; Cognitive Therapy; Cost-Benefit Analysis; Female; Health Care Costs; Humans; Low Back Pain /economics /psychology /rehabilitation; Male; Middle Aged; Netherlands; Psychotherapy /economics /methods; Regression Analysis; Rehabilitation /economics; Relaxation Therapy

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