Cognitive behavior therapy, exercise, or both for treating chronic widespread pain


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
The study objective was to evaluate the cost-effectiveness of telephone-delivered cognitive behavioural therapy (CBT), exercise and a combined intervention compared with treatment as usual among patients with chronic widespread pain. The authors concluded that telephone-delivered CBT was associated with substantial, significant and sustained improvements in patient global assessment. The quality of the study methodology was good. Methods and results were reported clearly and in detail. Given the scope of the analysis, the authors’ conclusions appear valid.

Type of economic evaluation
Cost-utility analysis

Study objective
The objective was to evaluate the effectiveness and cost-effectiveness of telephone-delivered cognitive behavioural therapy (CBT), exercise and a combined intervention compared with treatment as usual among primary care patients with chronic widespread pain.

Interventions
There were four interventions: telephone-delivered CBT in combination with treatment as usual (an initial assessment, seven weekly sessions and two follow-up sessions and a self-management manual); exercise in combination with treatment as usual (patients received a leisure facility and gym based exercise programme and were offered six fitness instructor-led monthly appointments); combined telephone-delivered CBT and exercise; and treatment as usual from patients’ general practitioner (GP).

Location/setting
UK/Outpatient care.

Methods
Analytical approach:
The economic analysis was undertaken alongside a clinical trial: Managing Unexplained Symptoms (chronic widespread pain) In Primary Care: Involving Traditional and Accessible New Approaches (MUSICIAN). The time horizon was nine months. The authors reported that the perspective was that of the health service.

Effectiveness data:
The MUSICIAN trial was a 2x2 factorial pragmatic randomised controlled trial. Participants over the age of 24 years registered in eight general practices were mailed a brief screening pain questionnaire. Eligible participants had to report chronic widespread pain for which they consulted their physician in the previous year. The 45,994 questionnaires (27,095 did not return the questionnaire) revealed 878 patients who were eligible and invited into the study and 442 of these were randomised: 109 patients to treatment as usual; 112 to telephone-delivered CBT; 109 to exercise; and 112 to combined treatment as usual and telephone-delivered CBT. Patients were followed-up for nine months. Reasons for drop-outs at all stages of the study were presented. The primary outcome measure in the study was improvement in the clinical global impression change score.

Monetary benefit and utility valuations:
Health-related quality of life was measured using the EQ-5D. Patients were administered with the EQ-5D at baseline, six months and nine months.
Measure of benefit:
The measure of benefit was quality-adjusted life-years (QALYs).

Cost data:
Direct costs were included for numbers of CBT and exercise sessions, GP and nurse visits, physiotherapy visits, other primary care visits, days in hospital and outpatient visits. Resource use costs of contacts with the therapists who provided CBT and exercise interventions were derived from the trial records kept by the therapists. All other resource use was derived from health service resource use questionnaires completed by the patient at six and nine months. Annual salary costs (including employer costs and capital and overhead costs) were used to estimated the cost of contact time with therapists. Other costs were derived from published national sources. The price year was 2009/10. All costs were reported in UK pounds sterling (£).

Analysis of uncertainty:
The authors reported that an intention-to-treat analysis was performed and included all participants who provided complete follow-up data. Outcomes were analysed using ordinal logistic regression or linear regression. Multiple imputation analysis examined the sensitivity to missing data.

Results
Clinical outcomes were reported as adjusted odds ratios at both six and nine months.

For patients with complete cost and QALY data over nine months the mean and standard deviation (SD) for QALYs gained per patient were: 0.520 (SD 0.139) for treatment as usual; 0.554 (SD 0.143) for telephone-delivered CBT; 0.539 (SD 0.122) for exercise; and 0.538 (SD 0.111) for telephone-delivered CBT in combination with exercise (figures from an online appendix).

Over nine months the mean cost per patient was: £804 (SD 1,824) for treatment as usual; £1,123 (SD 2,199) for telephone-delivered CBT; £1,294 (SD 1,357) for exercise; and £1,571 (SD 1,345) for telephone-delivered CBT in combination with exercise (figures from an online appendix).

Costs and benefits were combined using an incremental cost-utility ratio (additional cost per QALY gained). There appeared to be a discrepancy between the total cost and QALY data on the online appendix and the incremental results presented.

Incremental results using complete case data only (nine months): telephone-delivered CBT compared with treatment as usual resulted in an ICER (incremental cost-effectiveness ratio) of £16,542 per QALY gained; exercise resulted in an ICER of £72,270 per QALY gained; and the combined intervention resulted in an ICER of £34,731.

After multiple imputation of missing cases, when telephone-delivered CBT was compared with treatment as usual the ICER increased to £39,868 per QALY gained, that for exercise increased to £61,165 and that for the combined intervention increased to £49,220 per QALY gained.

Authors’ conclusions
The authors concluded that telephone-delivered CBT was associated with substantial, statistically significant and sustained improvements in patient global assessment.

CRD commentary
Interventions:
Adequate details of the interventions under study were reported.

Effectiveness/benefits:
Clinical and effectiveness data were derived from a single clinical trial (the MUSICIAN trial). Adequate details of the trial were reported, including how patients were identified, eligibility and exclusion criteria, randomisation and the number of patients included in the trial. Adequate details of the sample size calculations were reported. The authors recruited only 442 patients from an original sample of 552. The authors reported that due to the nature of the intervention it was impossible to blind participants and therapists to treatment allocation. It appeared that the results...
from this trial were internally valid. Utility data were derived from the trial population using an appropriate tool (EQ-5D).

Costs:
The perspective adopted in the economic analysis was appropriately reported to be that of the health care service. It appeared that all relevant major cost categories and costs for this perspective were included in the analysis. The authors adequately reported how resource use was collected and the sources of unit costs. Uncertainty around the cost estimates was not assessed. The price year and time horizon were reported adequately.

Analysis and results:
A single trial was used to collect outcome and cost information. Appropriate statistical techniques were performed to assess whether differences between groups were statistically significant. Multiple imputation techniques were used to impute missing data and assess the impact that missing data had on the results. The authors reported as a limitation to their study that patients were recruited from questionnaires rather than face-to-face consultations. There appeared to be a discrepancy in reporting of the result (incremental data in the paper did not match the total cost and QALY data in the online appendix) but this discrepancy did not change the conclusions reached.

Concluding remarks:
The quality of the study methodology was good. Methods and results were reported clearly and in detail. Given the scope of the analysis, the authors' conclusions appear valid.

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