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## **Randomised controlled trial of Alexander technique lessons, exercise, and massage (ATEAM) for chronic and recurrent back pain: economic evaluation**

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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**

The objective was to assess the cost-effectiveness of the Alexander technique, massage, and home based exercise for patients with chronic or recurrent non-specific back pain. The authors concluded that the combination of six lessons in the Alexander technique and exercise was the most effective and cost-effective intervention. The methodology was satisfactory and the results were well reported. The authors' conclusions are robust and appropriate.

### **Type of economic evaluation**

Cost-effectiveness analysis, cost-utility analysis

### **Study objective**

The objective was to compare the cost-effectiveness of the Alexander technique, massage, and home based exercise for patients with chronic or recurrent non-specific back pain.

### **Interventions**

The treatments for back pain were: courses of six and 24 lessons in the Alexander technique; six sessions of massage; and usual care. Usual care varied depending on whether the treatments were assessed individually or in combination. In each group, half of the patients were randomly chosen to receive a physician prescription for home based exercise plus a nurse's behavioural counselling, while the other half did not.

### **Location/setting**

UK/primary care.

### **Methods**

#### **Analytical approach:**

This study was based on a pragmatic randomised controlled trial (RCT) with a factorial design and a 12-month time frame. The authors stated that their study was conducted from the perspectives of the National Health Service (NHS), patients, and society.

#### **Effectiveness data:**

The clinical data were derived from a large, multi-centre, RCT that enrolled 579 patients and had 12 months of follow-up. The key clinical estimates were the Roland-Morris disability score and the number of days in pain.

#### **Monetary benefit and utility valuations:**

The European Quality of life (EQ-5D) questionnaire, completed by the patients in the RCT, was used to estimate the utility score. The EQ-5D was completed at baseline, the third month, and the twelfth month of the trial.

#### **Measure of benefit:**

The summary benefit measures were the reduction in disability score, the days pain free, and quality-adjusted life-years (QALYs). Discounting was not required given the short time horizon.

#### **Cost data:**

The costs to the NHS, patients, and society were considered. The cost categories to the NHS included those of the interventions, primary care contacts, out-patient appointments, in-patient hospital stays, and medication. Those to

patients included the costs of treatment-related travel, private treatment and over the counter preparations, prescription charges, loss of earnings, and expenditure on domestic help, and care giving. Those to society included the costs of time off work and the value of informal care. A detailed breakdown of the costs was provided. The resource use was obtained from practice records and patients' self completed questionnaires. Most of the cost data were obtained from publicly available sources in the UK, while others were collected during the trial. Personal costs were mainly reported by the participants. The costs were expressed in UK pounds sterling (£) at 2005 prices. Discounting was not relevant and was not applied.

#### Analysis of uncertainty:

A one-way sensitivity analysis was conducted to assess the uncertainty around the main model inputs (e.g. adherence, in-patient stays, and personal costs). A bootstrapping simulation was conducted to estimate the uncertainty around the incremental cost-effectiveness ratios.

## Results

The mean costs to the NHS ranged from £54.46 (standard deviation, SD: 100.4) for the usual care without exercise to £661.18 (SD: 328.3) for 24 lessons in the Alexander technique with exercise, and to the society they ranged from £187.16 (SD: 361.2) for usual care with exercise to £447.03 (SD 1,102) for 24 lessons in Alexander technique with exercise.

The incremental QALYs gained ranged from 0.015 (95% confidence interval, CI: -0.010 to 0.040) for massage compared with usual care, both with and without exercise, to 0.040 (95% CI: 0.020 to 0.060) for exercise in comparison with usual care, massage, and Alexander technique (6 or 24 lessons) without exercise.

The incremental cost-effectiveness for single therapies indicated that exercise alone offered the best value, with the incremental costs to the NHS of £61 per point reduction in the disability score, £9 per additional pain-free day, and £2,847 per QALY gain.

The incremental cost-effectiveness for two interventions indicated that six lessons in Alexander technique combined with exercise was the best value, with additional NHS costs of £64 per point reduction in disability score, £43 per additional pain-free day, and £5,332 per QALY gain, compared with usual care plus exercise.

The deterministic sensitivity analysis showed that these results were sensitive to the impact of adherence and in-patient stays.

## Authors' conclusions

The authors concluded that the combination of six lessons in Alexander technique and exercise was the most effective and cost-effective intervention.

## CRD commentary

### Interventions:

The interventions were adequately described. The choice of interventions was determined by the RCT on which this study was based.

### Effectiveness/benefits:

A RCT usually results in good quality clinical estimates, but the details of this study were reported elsewhere. The use of QALYs, among others (i.e. disability score and days free of pain), as the summary benefit measure was appropriate. You should consider if the time horizon was adequate to capture important differences in health outcomes between the interventions. The approach used to derive the QALYs was described and the utility data were appropriately derived from the study sample.

### Costs:

All the costs relevant to the stated perspectives of the NHS, patients, and society were reported. The time horizon was limited to the length of the trial (one year), which is common practice. You should consider if a longer horizon was likely to affect the cost differences between the interventions. The resource and cost estimates were representative of

the study population and setting and a breakdown of the cost items was given. The sources used were reported in detail, along with the price year.

**Analysis and results:**

The incremental cost-effectiveness analyses were appropriately performed and clearly presented. The authors appropriately conducted sensitivity analyses to address the uncertainty in the assumptions or input estimates and bootstrapping simulation for the uncertainty around the incremental cost-effectiveness ratios.

**Concluding remarks:**

The methodology was satisfactory and the results were well reported. The authors' conclusions are robust and appropriate.

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**Bibliographic details**

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**Other publications of related interest**

Beurskens AJ, de Vet HC, Koke AJ. Responsiveness of functional status in low back pain: a comparison of different instruments. *Pain* 1996;65:71-6.

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Von Korff M, Ormel J, Keefe FJ, et al. Grading the severity of chronic pain. *Pain* 1992;50:133-49.

**Indexing Status**

Subject indexing assigned by NLM

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