Cost-effectiveness of an adjustment group for people with multiple sclerosis and low mood: a randomized trial

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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 study evaluated the cost-effectiveness of psychological adjustment group therapy for multiple sclerosis patients with low mood. The authors concluded that the group therapy was a cost-effective intervention in the short term. Although the study methods appeared reasonable on the whole, the results were not well reported so it is not clear whether the conclusions are appropriate.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
The study evaluated the cost-effectiveness of psychological adjustment group therapy for multiple sclerosis patients with low mood.

Interventions
Two treatments were evaluated: a psychological adjustment group therapy intervention and usual care. Group therapy patients were invited to attend six group sessions over 12 weeks. The groups were led by two assistant psychologists overseen by a clinical psychologist with experience with multiple sclerosis patients. Therapy involved teaching patients to recognise symptoms of distress and strategies to improve their mood. Usual care patients received all other routinely provided rehabilitation.

Location/setting
UK/Outpatient

Methods
Analytical approach:
The costs and effects were both estimated from a 151 patient, randomised controlled trial. Patients were followed up at four and eight months. The stated perspective was that of the UK NHS.

Effectiveness data:
The effectiveness outcomes were: General Health Questionnaire 12, Hospital Anxiety and Depression Scale (HADS), Beck Depression Inventory-II (BDI-II) (a measure of depression severity) and EQ-5D general preference quality of life questionnaire. These outcomes were measured at baseline and then mailed to patients as a booklet at four and eight months after randomisation. Patients who were unable to complete questionnaires (for example, due to visual impairment) were visited by a researcher who was blinded to randomisation who helped them complete the questionnaires.

Where data were missing on EQ-5D scores the last value was carried forward.

Monetary benefit and utility valuations:
Utility scores were derived from EQ-5D questionnaires administered to the patients.

Measure of benefit:
Changes in utility score and point reductions in BDI-II were used as measures of benefit.
Cost data:
Resource use was derived from a patient questionnaire that was distributed after the three months of the intervention. Resource use categories included use of community care (general practitioners, community nurses and other health and social care professionals), in-patient stays and outpatient appointments. Information was subdivided based on whether or not it was related to multiple sclerosis. Resource costs were calculated using UK Department of Health tariffs, Personal and Social Services Research Unit (PSSRU) costs, medication costs derived from the World Health Organisation (WHO) Collaborating Centre for Drug Statistics Methodology and the British National Formulary. All cost sources were from 2009 or 2010 and reported in UK pounds sterling.

Analysis of uncertainty:
Levene's test for equality was used to measure whether there were statistically significant differences between groups in outcomes and costs. Results were considered statistically significant where \( p<0.05 \). A probabilistic sensitivity analysis was also undertaken using 1,000 non-parametric bootstrapping simulations to capture the total uncertainty around study estimates. Results of the probabilistic sensitivity analysis using BDI-II as the measure of benefit were presented on a cost-effectiveness plane.

Results
In the intervention group, mean combined costs declined by £470 per patient. In the usual care group there was an mean cost increase of £23 per patient. The authors indicated that there was no statistically significant difference between the groups in combined costs. Using Levene's test, cost differences were found to be significantly different between the groups. At four months the mean difference was -184 (95% CI -339 to -28; \( p=0.02 \)) and at eight months it was -388 (95% CI -753 to -23; \( p=0.04 \)).

There were no statistically significant differences in EQ-5D scores between the intervention and usual care groups at four or eight months. When BDI-II point changes were used as the effectiveness measure, there was a statistically significant difference (\( p=0.01 \)) in the point reduction in BDI-II. BDI-II was reduced by 2.38 (SD 4.72) for the intervention group and the reduction for usual care was 0.67 (SD 3.44). The authors reported that the mean difference in costs was -£401 and the difference in BDI-II reduction was 3.41, resulting in an ICER (incremental cost-effectiveness ratio) of £118 per point reduction in BDI-II for group therapy compared to usual care. Probabilistic sensitivity analysis for BDI-II showed that group therapy would be cost-effective in 93% of simulations where purchasers were willing to pay £118 per point reduction in BDI-II score.

Authors' conclusions
The authors concluded that the group therapy was a cost-effective intervention in the short term.

CRD commentary
Interventions:
The interventions were sufficiently described and appeared appropriate.

Effectiveness/benefits:
The randomised controlled trial appeared to be reasonably well conducted. The primary measure of benefit was change in utility score. Customarily, quality-adjusted life-years (QALYs) are calculated from changes in utility score in economic evaluations. The authors reported that there was a significant amount of missing data in the quality of life data; only 55 usual care patients had complete data for EQ-5D at four and eight months and only 43 patients in the intervention group had complete data.

Costs:
Costs were defined clearly and appeared to be derived from appropriate sources. Reporting was generally thorough. As indicated by the authors, gathering resource use from patients and asking them to recall four months of data may not produce accurate estimates. There were some differences in baseline resource use that were not explored.

Analysis and results:
In the booklet mailed out to study participants there were four measures of treatment effectiveness (General Health Questionnaire 12, HADS, BDI-II and EQ-5D). Only EQ-5D and BDI-II results were reported for the cost-effectiveness analysis. EQ-5D is a common measure in economic analysis but the authors did not state why BDI-II was chosen as the
second measure.

The authors only reported probabilistic sensitivity analysis for BDI-II (the more favourable outcome). Probability that the intervention was cost-effective was reported for only one cost-effectiveness threshold.

The effectiveness results were a little confusing. The mean difference in BDI point reduction between the groups reported in the text did not appear to correspond with the results in Table 4. There were two slightly different cost differences between the groups and this was not explained; it is possible that one was the mean results from a probabilistic analysis and one was the result from a deterministic analysis.

The authors acknowledged that there were some limitations of the study (small size, short follow-up, patient-reported resource use) but they reached a confident conclusion of cost-effectiveness.

Concluding remarks:
Although the study methods appeared reasonable on the whole, the results were not well reported so it is not clear whether the conclusions are appropriate.

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