A community-based exercise and education scheme for stroke survivors: a randomized controlled trial and 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 aim was to evaluate the effectiveness and costs of a community-based exercise and education scheme for stroke survivors. The authors concluded that this scheme was a low-cost intervention that successfully improved physical integration at one year, compared with standard care. The study was generally well carried out, but the clinical results might be too weak to support the authors’ firm conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The aim was to evaluate the costs and effectiveness of a community-based exercise and education scheme for stroke survivors.

Interventions
The community-based exercise and education scheme was compared with standard care. The scheme included 16 sessions, with two per week for eight weeks. Each session consisted of one hour of exercise, run by a qualified local instructor, supported by a physiotherapist, and one hour of interactive education.

Location/setting
UK/community.

Methods
Analytical approach:
The analysis was based on one study, with a one-year horizon. The authors stated that the study was carried out from the perspectives of the UK NHS, personal social services (PSS), and the participants and their carers.

Effectiveness data:
The clinical data came from a randomised controlled trial (RCT), with 243 patients recruited between January and December 2004. Randomisation was carried out by an independent assistant, using computer-generated numbers in geographical blocks of 18 patients. The unit of randomisation was the patient. There were 119 patients randomised to the intervention group and 124 to the control group. The baseline characteristics of the two groups, including patient age, Barthel score, and Mini Mental State Examination (MMSE) score, were comparable. Three primary outcomes were selected: the Subjective Index of Physical and Social Outcome (SIPSO) score; the Frenchay Activities Index score; and the Rivermead Mobility Index score. Secondary outcome measures were: the World Health Organization quality of life (WHOQoL-Bref) score; the Carer Strain Index score; Functional Reach score; Timed Up and Go Test score; and the Hospital Anxiety and Depression Scale score. Outcomes were measured by a allocation-blinded assessor at nine weeks, six months, and one year. One-year outcomes were collected by postal survey. Both an intention-to-treat and a per protocol analysis were presented.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
No summary measure of benefit was derived. The costs results were presented alongside the key clinical outcomes.

Cost data:
The direct medical costs included those of primary care consultations, secondary care, community care, and prescribed medications. The social care costs included those of home care, meals on wheels, day care centre, and social worker's time. The personal costs included those of private health care, social and domestic care, and transport. The cost data came from UK national databases and published studies. The resource use was from the patients in the clinical trial and was collected by means of patient diaries and questioning (to ascertain more details) by the assessor at outcome evaluation. The price year was 2005 and all costs were in UK pounds sterling (£).

Analysis of uncertainty:
No sensitivity analyses were undertaken.

Results
For the primary outcomes, there was a significant difference in the SIPSO physical score, from baseline, at nine weeks (median 1, 95% CI 0 to 2) and at one year (median 0, 95% CI -1 to 2).

Significant between-group changes in the WHOQoL-Bref psychological domain, from baseline, were found at six months (median 6.2, 95% CI -0.1 to 9.1).

Comparing the intervention against standard care, the average incremental NHS costs were £394 (95% CI -510 to 1,298), NHS and PSS costs were £746 (95% CI -432 to 1,924), and out-of-pocket costs were a saving of £7.62 (95% CI -260 to 245).

Authors' conclusions
The authors concluded that the community-based exercise and education scheme was a low-cost intervention that successfully improved physical integration at one year, compared with standard care.

CRD commentary
Interventions:
The selection of the comparators was based on the interventions in the clinical trial, which were two possible strategies for stroke survivors. The intervention was described in detail.

Effectiveness/benefits:
The analysis was based on a well-conducted RCT and these are usually considered to be valid sources of evidence. Other good features of this trial were that an intention-to-treat approach was used, power calculations were conducted to determine the appropriate number of participants, and the two groups were well matched in their baseline characteristics. Several clinical endpoints were used; they were not aggregated into a single benefit measure, making it difficult to compare these results with those of interventions for other indications. The authors highlighted the strengths and weaknesses of the trial and presented a balanced viewpoint.

Costs:
The economic analysis was consistent with the perspective. The cost items were described in detail, but their prices and the resource quantities were not generally given. This lack of detail limits the transferability. The price year and data sources were reported. Statistical analyses of the costs were carried out, but the impact of variations in the resource use or unit costs, on the final results, was not analysed as no sensitivity analysis was conducted.

Analysis and results:
The costs and benefits were not synthesised and a cost-consequences analysis was carried out. The results were clearly presented and the authors acknowledged some limitations of their analysis. They used several clinical outcomes, but demonstrated statistical significance in only two domains of two different outcome measures. An additional component of this mixed-method evaluation was a qualitative study (Reed, et al. 2010, see ‘Other Publications of Related Interest’ below for bibliographic details), the results of which might add weight to the clinical findings.
Concluding remarks:
The study was generally well carried out, but the clinical results might be too weak to support the authors’ firm conclusions.

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