Community occupational therapy for older patients with dementia and their care givers: cost effectiveness study


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
This study evaluated the cost-effectiveness of community-based occupational therapy for patients aged 65 years or older, with mild-to-moderate dementia, and their care givers. The authors concluded that occupational therapy was highly beneficial to patients and their care givers, and it was cost-effective. The study seems to have been generally well conducted and reported. The authors’ conclusions appear to be appropriate, but may not be generalisable to other settings.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study evaluated the cost-effectiveness of community-based occupational therapy for patients aged 65 years or older, with mild-to-moderate dementia, and their care givers.

Interventions
Occupational therapy consisted of cognitive and behavioural interventions to train patients to use aids to compensate for their cognitive decline, and to train care givers in coping behaviour and supervision. This was delivered by experienced therapists in 10 one-hour sessions, over five weeks. It was compared with usual care, which was the standard management of dementia, with no occupational therapy.

Location/setting
Netherlands/social care.

Methods
Analytical approach:
The economic evaluation was conducted alongside a single-blind randomised controlled trial. The time horizon was three months. The authors stated that their study was conducted from a societal perspective.

Effectiveness data:
The effectiveness data were from the randomised controlled trial. Randomisation was by block, conducted by a statistician not involved in the study. Treatment assessors were blind to group allocation. Patients who were living in the community and had a primary care giver, who cared for them at least once a week, were recruited between April 2001 and January 2005; follow-up was three months. There were 68 patients and their care givers in the occupational therapy group, and 67 for usual care. Effectiveness was adjusted for a large number of covariates. Missing data were imputed using the last observation carried forward. The data were analysed by randomised group (intention to treat). The primary outcome for patients was daily functioning, measured using the Process Scale of the Assessment of Motor and Process Skills (-3 to 4; higher score was better) and the Performance Scale of the Interview for Deterioration in Daily Living Activities in Dementia (0 to 44; lower score was better). The primary outcome for care givers was the Sense of Competence Questionnaire (27 to 135; higher score was better).

Monetary benefit and utility valuations:
Not relevant.
Measure of benefit:
The three primary outcomes, for patients and care givers, were synthesised into one measure of clinically significant improvement, using the criteria for clinical significance for each measure. The measure of benefit was the percentage of patients and their care givers achieving this combined clinically significant improvement.

Cost data:
The costs included the direct and indirect costs of health care services, and productivity lost by care givers. The unit costs were from Dutch government sources. The resource use was from caregiver diaries and occupational therapist records. The diaries included visits to health care services (patient and care giver), time spent caring, hours of home nursing or housekeeping, and days hospitalised or in care institutions. Productivity costs were valued using the friction costs method. All costs were reported in Euros (EUR) and converted to US $ and UK £. Missing cost data were created using mean imputation.

Analysis of uncertainty:
One-way and probabilistic sensitivity analyses were undertaken. Probabilistic sensitivity analysis was conducted using bootstrap methods, and summarised in a cost-effectiveness acceptability curve.

Results
Three patient-caregiver pairs left the trial after randomisation (one occupational therapy; two usual care). Fifteen pairs in each group (22.7% overall) were lost to follow-up.

There were statistically significant differences in all primary outcome measures at three months, with all outcomes favouring occupational therapy. The number needed to treat for a successful outcome was 2.8 (95% CI 2.7 to 2.9) in the occupational therapy group.

The average cost savings with occupational therapy were EUR 1,748. Occupational therapy was dominant (less costly and more effective) in 94% of simulations. At a willingness-to-pay threshold of EUR 2,000 for a 1% increase in clinically significant improvements, there was a 99% likelihood of occupational therapy being cost-effective.

Authors’ conclusions
The authors concluded that occupational therapy was highly beneficial to dementia patients and their care givers, and it was cost-effective.

CRD commentary
Interventions:
The interventions were reported with enough detail and they appear to have been appropriate.

Effectiveness/benefits:
The effectiveness data were well reported. Many patients were lost to follow-up over three months (30 of 135). No assessment of the characteristics of patients with missing data, compared with those with complete data, was reported. Imputation using the last observation carried forward could introduce bias, but the magnitude and direction any bias was unclear. The benefit measure was described. The authors noted that a less specific measure, such as quality-adjusted life-years, would have made the results more generalisable.

Costs:
The perspective was clearly stated, and the cost categories appear to have been appropriate for this perspective. The methods used to estimate the resource use were clearly described and seem to have been appropriate. The use of participant diaries could make the resource use estimates country specific and reduce the generalisability of the results. The costs were from appropriate Dutch sources. Due to the significant loss to follow-up, there was a lot of missing resource use data. These were estimated by mean imputation, which could introduce bias, as the average patient-carer data might differ from the missing patient-carer data. No analysis was reported to identify whether the data were missing at random, or due to the characteristics of the missing patient-carer pairs. The costs were not discounted, which was appropriate, but it was unclear if they were adjusted for inflation, as no price year was stated.

Analysis and results:
The economic evaluation was sufficiently described. Appropriate techniques were used to adjust for initial differences. The results were presented appropriately. Uncertainty was evaluated and the variance statistics were reported, but the bootstrapping methods were not described. The benefit measure was specific, making it difficult to interpret and compare this study's results with those of other studies; this limitation was acknowledged by the authors. The authors compared their results with other published results, and reported the strengths and limitations of their study. They acknowledged that their study was short, and their patients may not have been representative of the population. The intervention required well-trained therapists; the availability of this resource should be considered.

Concluding remarks:
The study seems to have been generally well conducted and reported. The authors' conclusions appear to be appropriate, but may not be generalisable to other settings.

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