The cost-effectiveness of a nonpharmacologic intervention for individuals with dementia and family caregivers: the Tailored Activity Program

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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 cost-effectiveness of the Tailored Activity Program (TAP) for patients with dementia and family caregivers. The authors concluded that the TAP was likely to be cost-effective, but the costs were limited, the study was short and the sample was small; further research was needed. The authors reached appropriate conclusions, while acknowledging their study limitation, but the perspective was limited, sensitivity analysis methods were poorly described, and the adjustments were crude and probably inaccurate.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The aim was to evaluate the cost-effectiveness of the Tailored Activity Program (TAP) for patients with dementia and family caregivers.

Interventions
The TAP was compared with being on a waiting list. The programme was eight sessions of occupational therapy, over four months, to identify the patients' preserved capabilities, previous roles, habits and interests, and then to develop three customised activities and train families to do them. Patients on the waiting list received no study contact.

Location/setting
USA/community care.

Methods
Analytical approach:
The cost-effectiveness analysis was based on one clinical study (see Other Publications of Related Interest). The time horizon was the four months of the clinical study. The authors reported that the costs were estimated from the perspective of the caregiver.

Effectiveness data:
The clinical outcomes were two items from the four-item Caregiver Vigilance Scale from the US National Institutes of Health, Resources for Enhancing Alzheimer's Caregiver Health (REACH). These were the number of hours doing things, and the number of hours on duty. The hours doing things referred to time spent directly caring for a person with dementia. The hours on duty referred to hours where the caregiver had to be available for care or time spent on care oversight and planning. These were measured in a randomised controlled trial, with 60 pairs of patients with dementia and their caregivers.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The measures of benefit were the two clinical outcomes: the caregiver hours doing things and hours on duty.

Cost data:
No costs were included for patients on the waiting list. The costs for the intervention were therapist training and supervision, caregiver time in intervention sessions, assessment materials, intervention supplies, therapist time including travel, and mileage. All costs were reported in US $.

**Analysis of uncertainty:**
An analysis of covariance was conducted to test the differences between the groups. Probabilistic sensitivity analysis was conducted. One-way sensitivity analyses varied the costs between their minimum and maximum values for the therapist time and travel expenses.

**Results**
Caregivers in the programme reported 5.4 hours doing things (SD 2.5), those in the control group reported 8.6 hours doing things (SD 5.7). The hours on duty were 13.4 (SD 7.6) with the programme, and 17.6 (SD 7.1) with control. After adjusting for differences in baseline values, the differences between groups were 3.3 hours in favour of the TAP for hours doing things, and 6.9 hours in favour of the TAP for hours on duty.

The total average cost was $942 with the programme, and zero with control. The cost per hour saved was $2.37 for doing things, and $1.10 for on duty.

For the probabilistic sensitivity analysis, a willingness-to-pay threshold of $3,893 over four months was derived from the housekeeping rates multiplied by the number of hours that would be saved by carers due to the intervention. The likelihood that the TAP was cost-effective at this threshold was 79.2% for doing things, and 79.6% for on duty. The one-way sensitivity analyses had no effect on the cost-effectiveness conclusions.

**Authors’ conclusions**
The authors concluded that the TAP was likely to be cost-effective. They acknowledged their limited costing, study length and sample size, and that there was a need for further research.

**CRD commentary**
**Interventions:**
Patients on the waiting list did not receive the intervention, and presumably received standard care. This was useful for local decision-making, but as this care was not described it is unclear how relevant it would be to other settings. The interventions were clearly for use at home; another option, to alleviate caregiver difficulties, would be to move patients with dementia into an institution – this was not considered.

**Effectiveness/benefits:**
The outcomes were only two of four outcomes from the Caregiver Vigilance Scale. It was unclear why the other two outcomes were not used, and what these outcomes were. Another publication was referenced, but the details of the clinical trial were not reported. The authors attempted to adjust for baseline differences, but this was crudely done, and was not likely to have accounted for differences in the final outcomes due to initial differences. Two measures of benefit were used; these could have been combined as both measured time, and this would have reduced the cost-effectiveness of the intervention. As time was the measure of benefit, carer time and hardship could have been given a monetary value in a cost-benefit analysis, as acknowledged by the authors. The outcomes did not assess patient benefits, which could be important to the caregiver, beyond their own time benefits.

**Costs:**
Only the cost of the intervention was calculated, and so the control group had no cost. There may have been other costs incurred by caregivers or the health system that were affected by the intervention. This could have underestimated the benefit of the TAP. The intervention costs appear to have been applicable to the setting. The perspective was that of the caregiver, but it was unclear if the caregiver would pay the intervention costs. The authors acknowledged that their costing perspective was limited; they indicated that a societal perspective with objective health care use and potential caregiver productivity losses would have been more appropriate. The price year was not stated, making reproduction of the results difficult.

**Analysis and results:**
The chosen cost-effectiveness threshold was a little difficult to interpret. If the caregiver paid for the intervention, then
using the cost of housekeeping to determine whether or not paying for the intervention broke even was appropriate. The methods for the probabilistic analysis were not described. It is likely that it was conducted by sampling from the individual patient data, but this was not explicitly stated. It was unclear whether the analysis was conducted appropriately, making the validity of the results uncertain. The authors acknowledged several limitations, such as the study had a short follow-up that may not have captured the long-term benefits and adherence; and it was small and most participants were White.

Concluding remarks:
The authors reached appropriate conclusions while acknowledging their study limitations. The perspective was only applicable if the caregiver's choice was limited to hiring help or doing everything themselves. The sensitivity analysis methods were not fully reported, and the adjustments for initial differences were crude and likely to be inaccurate.

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