Effectiveness of educational programs on reducing the burden of caregivers of elderly individuals with dementia: a systematic review

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CRD summary
The authors concluded that educational and support programs for caregivers were more effective than usual care in reducing the burden of caregivers of patients with dementia. The authors' conclusions may be overstated, due to considerable heterogeneity between study results and a lack of study details, making it difficult to assess the appropriateness of the synthesis.

Authors' objectives
To assess the effectiveness of educational and support programs for caregivers of elderly individuals with dementia on reducing caregiver burden.

Searching
PubMed, EMBASE, LILACS, CINAHL, Web of Science, SciELO and The Cochrane Library were searched to December 2011; search terms were reported. The authors also searched controlledtrials.com and checked conference abstracts (details not reported) and references of review articles and randomised controlled trials (RCTs) identified. No language or publication restrictions were applied.

Study selection
RCTs with blinded assessment that assessed interventions providing interdisciplinary education and support to caregivers of patients with dementia, and reported caregiver burden using the Zarit Burden Interview, were eligible for inclusion.

The included RCTs were conducted in Spain, France, Canada, USA, Russia and Peru and published between 1994 and 2011; most were multicentre RCTs. Caregiver educational programs were delivered either weekly or monthly, on either an individual or group basis, compared with usual care. Each of the studies reported the Zarit score at baseline and final follow-up. Zarit score at baseline ranged from 19.4 to 62.0 in the intervention group and 21.2 to 58.4 in the control group.

Two reviewers independently assessed studies for inclusion; disagreements were resolved by a third reviewer.

Assessment of study quality
Two reviewers independently assessed the quality of the included studies based on allocation sequence generation, concealment of allocation and blinding.

Data extraction
The mean difference and standard deviation in Zarit score from baseline to follow-up for intervention and control groups was calculated for each of the included studies. The authors did not report how many reviewers undertook data extraction.

Methods of synthesis
Studies were separated into those that used intention-to-treat (ITT) analysis, and those that did not. The mean difference between intervention and control groups was pooled using fixed-effect and random-effects models. Heterogeneity was assessed using $\chi^2$, and quantified using $I^2$. Sensitivity analysis was undertaken excluding clinically heterogeneous studies (those with differences in intervention or participant characteristics).

Results of the review
Seven RCTs were included in the review (633 caregivers, range 45 to 157). Follow-up ranged from four to twelve months. All RCTs were considered to have a low risk of bias; all RCTs used blinded outcome assessment.
There was no statistically significant difference in Zarit score between intervention and control groups when all studies were pooled together (MD -1.79, 95% CI -4.27 to 0.69; seven RCTs), or in the subgroup analysis of studies using ITT analysis (MD -1.10, 95% CI -2.25 to 0.05; five RCTs) or the subgroup analysis of studies that did not use ITT analysis (MD -4.46, 95% CI -15.54 to 6.62; two RCTs). There was significant heterogeneity for each of these results.

In the sensitivity analysis, excluding three clinically heterogeneous RCTs, there was a statistically significant decrease in Zarit score, favouring the educational intervention group (MD -1.62, 95% CI -2.16 to -1.08; four RCTs, no significant heterogeneity).

**Authors' conclusions**
The authors found evidence to support educational and support programs for caregivers as being more effective than usual care in reducing the burden (assessed using the Zarit Burden Interview) of caregivers of patients with dementia.

**CRD commentary**
The review question and inclusion criteria were clear. A comprehensive search of relevant sources was undertaken, without language or publication status limitations. Study selection and quality assessment were undertaken independently by two reviewers, which reduced the potential for reviewer bias and error, however it was unclear whether the same process was used for data extraction. Limited details and results of the quality assessment of the included studies were presented, but the authors reported that all included studies were considered to have a low risk of bias.

Limited details of the included studies were presented, therefore it was unclear whether it was appropriate to undertake meta-analysis; there was evidence of significant statistical heterogeneity. Owing to the limited reporting of study details, it was also unclear whether the sensitivity analysis was appropriate.

The authors' conclusions may be overstated, due to considerable heterogeneity between study results and a lack of study details, making it difficult to assess the appropriateness of the synthesis.

**Implications of the review for practice and research**
**Practice:** The authors stated that interdisciplinary education and support programs for caregivers could help to reduce the burden of individuals who care for patients with dementia. Therefore, the inclusion of such programs in institutions devoted to the care of the elderly could be beneficial and should be encouraged. It could be inferred that these programs should also include the sharing of non-pharmacological management strategies for the behavioural and psychological symptoms of dementia.

**Research:** The authors did not state any implications for research.

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This is a systematic review that meets the criteria for inclusion on DARE.