Supporting the dementia family caregiver: the effect of home care intervention on general well-being

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CRD summary
The authors concluded that evidence that home care interventions were beneficial to family caregivers of dementia patients was weak, but these interventions were valued and reduced caregiver burden and depression in the short term. Given the risk of bias, methodological weaknesses in the included studies and limitations in the analysis, the authors’ conclusions should be treated with caution.

Authors’ objectives
To evaluate the impact of dementia home care interventions on depression and burden in family caregivers.

Searching
MEDLINE, EMBASE, Cochrane Database of Systematic Reviews, DARE, Cochrane Central Register of Controlled Trials (CENTRAL) and American Colleges of Physicians Journal Club were searched from 1980 to 2007. Search terms were reported. References list of relevant articles and conferences and PhD manuscripts were handsearched.

Study selection
Randomised controlled trials (RCT) or controlled trials that compared dementia home care interventions to usual care, waiting list or placebo in community dwelling patients with dementia with a family caregiver were eligible for inclusion. Outcomes eligible for inclusion were depression or burden as measured using validated psychometric instruments. Eligible articles needed to meet the quality criteria: randomisation; eligibility criteria specified; follow-up of at least six months; and primary outcomes measures reported as point estimates and variability measures. Studies that reported only qualitative data were excluded.

Included studies assessed psychosocial interventions (cognitive-behavioural therapy, family or group training), respite care, telephone or internet-based support, case management, physical exercise and communications skills. Control conditions were usual care, waiting list, attentional control, lower-level intervention or information package, or helpline. Where stated, intervention duration ranged from brief respite care to two years. Follow-up ranged from 12 weeks to eight years. Family caregivers included in the study were spouses, children, friends and neighbours.

The authors did not state how studies were selected for the review.

Assessment of study quality
Quality of included studies was assessed using the Delphi criteria, a nine-item checklist used for assessing the validity of RCTs. Several independent reviewers discussed the quality of the study if there were doubts about the quality of a study.

Data extraction
Standardised mean differences and standard errors where calculated for each study. Effect sizes were calculated from the standardised mean differences. The authors did not state how many reviewers performed study selection.

Methods of synthesis
Pooled effect sizes with 95% confidence intervals were calculated. Studies were weighted using the inverse of the variance of the effect estimate. Where significant heterogeneity was found, a random-effects model was used. Separate analyses were conducted for each intervention type. Statistical heterogeneity was assessed using the Chi² and I² statistics.Publication bias was assessed using funnel plots.

Results of the review
Twenty-nine articles were initially selected for review (n=8,873). The authors reported that they included 26 studies for meta-analysis; however, inspection of the forest plot indicated that 22 studies were included in the meta-analyses (n=8,362). Twenty-one studies were RCTs (n=8,322) and one trial was a pre-post test controlled study with a waiting list control (n=40). Quality scores were not reported. Methodological limitations identified in included studies were recruitment bias, use of intervention in control group, small sample sizes, high drop-out and lack of randomisation.

**Depression**: Psychosocial intervention (effect size 0.03, 95% CI -0.42 to 0.35; 15 studies), telephone support (effect size 0.07, 95% CI -2.62 to 2.75; two studies) and case management (effect size -0.32, 95% CI -0.73 to 0.09; three studies) did not significantly decrease feelings of depression in family carers of dementia patients compared with controls. There was evidence of significant statistical heterogeneity for psychosocial interventions ($I^2=54.4\%$) and case management ($I^2=83.1\%$).

**Burden**: Respite care significantly increased burden in family carers of dementia patients compared to controls (effect size 0.30, 95% CI 0.12 to 0.48; two studies). Psychosocial intervention did not significantly alter feelings of burden compared to controls (effect size -2.94, 95% CI -6.28 to 0.40; six studies). There was evidence of significant statistical heterogeneity for psychosocial interventions ($I^2=72.5\%$).

There was evidence of publication bias for studies of psychosocial interventions for both outcomes. It was not possible to assess publication bias for other interventions due to the small number of studies.

**Authors' conclusions**
Evidence that home care interventions was beneficial to family caregivers of dementia patients was weak. However, dementia home care support was highly valued by family caregivers and provided short-term relief from depression and burden.

**CRD commentary**
The review addressed a clear question with inclusion criteria that were initially well-defined. However, inclusion criteria were subsequently changed without reason and it appeared that studies were included that did not meet these criteria. It was unclear which studies were included in the final analysis. Several relevant databases were searched. It was unclear whether language restrictions were applied during the search; therefore, language bias could not be ruled out. Publication bias was found for psychosocial interventions and could not be ruled out for other interventions. It was unclear whether appropriate steps were taken in the study selection and data extraction stages to minimise risks of reviewer error and bias. A validity assessment was carried out; however, this appeared not to have been conducted independently in duplicate for all included studies. The authors did not report on the findings of the validity assessment in detail, but some methodological weaknesses were identified in the included studies. There was evidence of both clinical and statistical heterogeneity and it was unclear to what extent the pooling of studies was appropriate. It appeared that not all the selected studies were included in the meta-analyses and the authors' reasons for excluding some of these studies was unclear. The authors' conclusions did not accurately reflect the data presented.

Given the risk of bias, methodological weaknesses in the included studies and limitations in the analysis, the authors' conclusions should be treated with caution.

**Implications of the review for practice and research**
**Practice**: The authors stated that professional caregivers should be aware that home care interventions were highly valued by family caregivers and provided short-term benefits in terms of depression and burden.

**Research**: The authors stated that further research was needed to match the intervention to the needs and wishes of the family caregiver. Use of institutionalisation of dementia patients as a primary outcome may also be useful.

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