Meta-analysis of psychosocial interventions for caregivers of people with dementia

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CRD summary
This review assessed the effects of psychosocial interventions for people such as family members who provide care at home for people with dementia. The authors concluded that some psychosocial interventions can reduce psychological harm among carers and help people with dementia stay at home longer. The support for the conclusions is not convincing.

Authors' objectives
To review the outcomes of psychosocial interventions for people who give informal care to people with dementia.

Searching
MEDLINE (from 1985 to 2000), EMBASE (from 1988 to 2000), PsycINFO (from 1984 to 2000), AgeLine (from 1985 to 2000), CINAHL (from 1985 to 2000), Best Evidence (from 1991 to 2000) and the Cochrane Library (Issue 4, 2000) were searched; the search terms were reported. The reference lists in papers obtained were checked for additional studies. The search was restricted to English language literature.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) and quasi-experimental studies were eligible for inclusion. RCTs and non-randomised trials were included.

Specific interventions included in the review
Studies of psychosocial interventions for caregivers were eligible for inclusion. The types of interventions included were counselling, education, family counselling or extended family involvement, patient involvement, support group or programme, stress management and training. The control groups were only defined as non-intervention.

Participants included in the review
Studies of informal caregivers providing care for people with dementia, diagnosed with Alzheimer's disease, were eligible for inclusion. Informal care was defined as unpaid care given at home or in a non-institutional setting. Most of the caregivers in the included studies were spouses, women, and aged 55 years or older. Studies of respite care were not included in this review.

Outcomes assessed in the review
The inclusion criteria for outcomes were not stated. The primary outcomes were caregiver psychological morbidity and burden. Measures of morbidity included the General Health Questionnaire, Hamilton Depression Rating Scale, Brief Symptom Inventory, Hopkins Symptom Checklist and several other scales. Burden measures included the Burden Interview, Rankin Scale, Caregiver Hassles Scale and other scales. Where these outcomes were not reported, any main outcome measure was used, such as measures of caregiver coping skills and social support. Measures of caregiver knowledge of Alzheimer's disease, patients' mood and nursing home placements were also included.

How were decisions on the relevance of primary studies made?
One reviewer made decisions about relevance and when in doubt consulted another reviewer.

Assessment of study quality
Quality scores were assigned using criteria for study design, participants, outcomes, statistics and results. The criteria, which were described in the report, were given equal weight. A score of more than 7 out of a maximum of 11 was defined as good quality, while a score of less than 5 was poor quality. Two reviewers rated the methodological quality
of the studies independently.

**Data extraction**
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Data to calculate effect sizes, either mean differences between treatment and control or odds ratios, were extracted. Studies that reported a significant change in a main outcome, or an effect size of 0.5 or more, were classified as study success. The number of withdrawals per group was extracted. Data were extracted on follow-up and classified as post-test, 3 to 6 months, more than 6 months and most recent. Data were also extracted on sessions or occasions of contact, and classified as minimal (1 to 2), moderate (3 to 5), medium-high (6 to 10), or high or intensive (more than 10).

**Methods of synthesis**
How were the studies combined?
A meta-analysis was used to estimate the weighted standardised mean differences (SMDs) in effect size with 95% confidence intervals (CIs). If a study tested more than one intervention each was analysed as a separate study. Random-effects analyses were reported. An effect size of 0.2 was considered small, 0.5 as moderate and 0.8 as strong.

How were differences between studies investigated?
A statistical test for homogeneity was applied in the meta-analysis. A sensitivity analysis was conducted by excluding extreme values and by omitting one study at a time from the meta-analysis of the most current assessment point. Predictors of positive effect size were explored post hoc using a chi-squared analysis or a 2-tailed Mann-Whitney U-test. Correlation analysis was used to look for association.

**Results of the review**
Forty-five studies met the inclusion criteria, but only 30 (n=2,040) were included in the analysis, of which 21 were RCTs. Since each comparison was included as a separate study and 2 trials had 2 comparisons and one trial had 3 comparisons, the number of studies included was reported to be 34. Reasons for the exclusion of studies from the analysis were 5 or fewer patients in the intervention or control group (2 studies), insufficient data to calculate the effect size or nursing home delay (11 studies), and extreme values of effect size (2 studies).

The quality rating of the trials ranged from 3 to 10. The rating was found not to correlate with effect size.

Twenty-three of the 34 studies met the criteria for study success, defined as a significant change in one of the main outcome measures or an effect size of at least 0.5. Twenty out of 26 studies showed a positive effect on caregiver psychological morbidity, but only five were statistically significant. One out of 20 studies showed a significant effect on caregiver burden.

The pooled effect size for psychological morbidity at most recent follow-up (post-test for most studies) showed a statistically significant benefit with intervention compared with non-intervention; the SMD based on 26 comparisons from 22 trials was 0.31 (95% CI: 0.13, 0.5). No significant difference was shown in caregiver burden; the SMD based on 20 comparisons was 0.09 (95% CI: -0.09, 0.26). Statistically significant small to moderate effect sizes were shown for caregiver knowledge, patient mood, and in the pooled analysis of any main outcome measure. Heterogeneity between the studies was significant in all of the pooled analyses.

Involvement of caregiver and patient in the intervention was found to be a possible predictor of positive effect size for caregiver psychological morbidity, any main outcome and study success.

Four out of 7 studies that used time to nursing home placement as an outcome indicated that the intervention delayed institutionalisation.

**Authors' conclusions**
Some psychosocial interventions can reduce psychological morbidity in caregivers and help people with dementia stay at home longer.

**CRD commentary**

The review question and the inclusion criteria were clear. Various relevant sources were searched, but the restriction to English language publications and no mention of unpublished studies raises the possibility of biases in the review; this might have led to the overestimation of intervention effects. Study quality was assessed, but the composite scores were probably not very useful indicators of potential bias in the included studies and it is unsurprising that the rating did not correlate with effect size.

In the meta-analyses it was unclear whether steps were taken to avoid counting the same control group participants twice when two outcome measures from within a study were pooled as if they were from separate studies. The pooled effects represent the average effect of studies that had different populations, types of interventions (with different constituents) and measures of outcome, and whose results were inconsistent. The individual study results were shown only for one analysis, psychological morbidity at most current follow-up. A reliable interpretation of average effects is impossible without a thorough narrative investigation of potential explanations for differences between the studies, including what constituted non-intervention in the control groups, which this review did not do. With the exception of caregiver knowledge, all the average effects sizes were less than moderate and might not be considered to provide much support to the authors’ conclusions. There was no information on the country or cultural setting of the included studies, which further limits judgment on the applicability of the findings.

**Implications of the review for practice and research**

**Practice:** The authors stated that short educational programmes, support groups alone, single interviews and brief interventions do not work, but it was unclear whether this assertion was based on the studies included in the review.

**Research:** The authors stated that future research needs to be more rigorous, i.e. RCTs with blind assessment of the outcomes and at least 6 months' follow-up. The outcomes need to include reliable and validated measures of burden, knowledge, depression and quality of life. More intensive interventions and interactions with drug therapy also need to be evaluated.

**Bibliographic details**


**PubMedID**

12752841

**Other publications of related interest**


**Indexing Status**

Subject indexing assigned by NLM

**MeSH**

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.