The effectiveness and efficiency of home-based nursing health promotion for older people: a review of the literature

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CRD summary
This review assessed the effectiveness and efficiency of preventive home-based nursing programmes for older people living in the community. The authors' cautious conclusion, that a diversity of home-visiting programmes can positively affect a number of patient outcomes but further research is required, reflects the evidence presented.

Authors' objectives
To determine the effectiveness and efficiency of nurse-led preventive, home-based visits for older people living in the community.

Searching
MEDLINE, CINAHL, the Cochrane Controlled Trials Register, AgeLine, HealthSTAR, PsycINFO, Sociological Abstracts, the Cochrane Database of Systematic Reviews and the Social Sciences Citation Index were searched from inception to 2003; the search terms were reported. The references of all relevant papers were checked. Authors of relevant papers and experts in the field were also contacted to identify unpublished material and web searches were conducted. Only English language articles were eligible.

Study selection
Randomised controlled trials (RCTs) investigating home-based community health promotion provided by a registered nurse (or equivalent, i.e. health or home visitor), either alone or as part of a team, were eligible for inclusion. Studies of interventions that involved only screening and referral or recommendations were excluded. Also excluded were studies that analysed home visits for therapeutic or rehabilitative purposes, or where the intervention was provided as a response to a patient health problem or event such as hospitalisation. Studies where the intervention was designed as a substitute for nursing home or hospital care were excluded. The interventions in the included studies involved a variety of in-home services, such as health-education, supportive physical and psychosocial care, functional assessment and follow-up, at-home screening and treatment, and integrated and interdisciplinary case management. The duration of follow-up ranged from 6 to 48 months. Studies of older people (65 years or older) living in the community (hospital, nursing home or residential care not included) were eligible for inclusion. Studies where the intervention was aimed exclusively at individuals who had been discharged from the hospital were excluded. Eligible outcomes included mortality, admission to institutions, health status, functional status, use of health and social services, and costs.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The quality of studies assessing the effectiveness of home-based nursing health promotion was assessed using the Jadad scale. The quality of studies assessing the efficiency of home-based nursing health promotion was assessed using criteria based on Drummond et al. (1997). Further details of the validity criteria were reported in the review.

The authors did not state how the papers were assessed for validity, or how many reviewers performed the validity assessment.

Data extraction
The direction of overall effects was extracted for the outcomes of interest. The significance and size of effect were not reported.

The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.
Methods of synthesis
The studies were combined in a narrative, grouped by outcome and categorised under either effectiveness or efficiency. Differences between the individual studies were highlighted in the tables and text.

Results of the review
Twelve RCTs were included (number of participants not reported). Twelve assessed effectiveness and nine assessed efficiency.

Of the studies assessing effectiveness, 58% reported an appropriate process of randomisation, 17% reported allocation concealment, 58% reported blinding, and 33% reported a loss to follow-up of greater than 20%. Of the studies assessing efficiency, the main problems were lack of definition of the viewpoint of the evaluation, limited description of competing alternatives, lack of sensitivity analysis, lack of inclusion of relevant costs and consequences for each alternative, and small sample sizes.

Effectiveness.
Mortality (11 studies): 4 studies showed a significantly lower mortality rate in favour of the intervention group compared with controls.

Health and functional status (6 studies): 4 studies found that individuals in in-house preventive programmes were more likely to experience and retain functional gains compared with controls.

Caregivers (1 study): caregivers in the intervention group reported significantly higher levels of satisfaction with care compared with usual care.

Efficiency.
Hospital admission and hospital stay (9 studies): 5 studies found significantly lower numbers of admissions to hospital, or significantly fewer days spent in hospital, in the intervention group compared with controls. One study found a significant reduction in hospital stay for younger participants only (65 to 74 years).

Use of nursing homes (11 studies): 5 studies found significantly lower use of nursing homes in the intervention group compared with controls. One study looked at a combined outcome of mortality and institutionalisation; this study found more individuals were alive and living outside of an institution in the intervention group after 2 and 3 years' follow-up.

Use of other health and social services (9 studies): 6 studies found a higher use of other health and social services in the intervention group compared with controls.

Cost information
Six studies provided a full or partial economic evaluation. On study used a cost-effectiveness analysis; this study found that the cost of the intervention for each year of disability-free life gained was approximately US $6,000. Five studies used a cost analysis; three of these studies found a cost-saving due to a reduction in nursing home and hospital admissions.

Authors' conclusions
A diversity of home visiting programmes for older people, carried out by nurses, can positively affect health and functional status, mortality, use of hospitalisation or nursing homes, and costs. However, further research is required.

CRD commentary
The study was supported by clear inclusion and exclusion criteria. Several sources were searched for relevant published studies and the authors attempted to locate unpublished material. The methods undertaken for the study selection, validity assessment and data extraction processes were not reported, so the likelihood of error or bias at these stages cannot be assessed. The quality of the included studies was evaluated, although only an overview of the methodological quality was given for the categories 'effectiveness' and 'efficiency', thereby limiting any interpretation of the results.
presented. The narrative synthesis was appropriate given the variation between the included studies. The results relied on vote counting of the overall direction of effect, with no indication of effect size and often no indication of statistical or clinical significance. The authors highlighted a number of issues, e.g. difficulties related to the design of the intervention and measurement of both effectiveness and efficiency. Although it is difficult to assess the overall reliability of the data and the review methods, the authors’ conclusions are cautious and reflect the evidence presented.

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

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that further research is required. Such research should focus on the outcomes of quality of life, mental health, social support, caregiver burden, the acceptability of the intervention and specific subgroups that would benefit most from intervention, and also evaluate cost-effectiveness. The authors also suggested that there is a need for a theoretical foundation and increased emphasis on on health promotion strategies.

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