Nursing interventions for patients with chronic conditions

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CRD summary
The review assessed the effects of home-based nursing interventions for patients with chronic conditions. The author concluded that patients with chronic conditions benefited from multiple, individualised, follow-up visits by nurses. However, the inclusion of studies with diverse interventions and outcomes limits the conclusions of the review.

Authors' objectives
To describe and assess the efficacy of nursing interventions provided during home-visits for patients with chronic conditions.

Searching
MEDLINE, EMBASE, PsycINFO, CINAHL and the Cochrane CENTRAL Register were searched from 1993 to 2003; the search terms were reported. The bibliographies of relevant articles were screened for additional references. The author did not state whether any language restrictions were applied as part of their search strategy, or whether unpublished material was sought.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion.

Specific interventions included in the review
Studies examining individual, home-based, nursing interventions for patients with chronic conditions were eligible for inclusion. The interventions were required to last at least 3 months, have a follow-up of at least 3 months, and include a minimum of three sessions. Nurse-physician collaborations were included where the nursing intervention formed the major part of the treatment. Studies involving individual nursing procedures (e.g., wound management), prevention of falls, or post-operation or hospitalisation follow-up, were not eligible. Where described, the control groups received alternative interventions or routine care.

Participants included in the review
Elderly people with no described chronic disease who were living in their own homes, and patients with diabetes or arthritis, were included. Recently discharged patients, or patients with cardiac, respiratory or miscellaneous diseases, were excluded from the review, as were children, pregnant women and those with mental illness.

Outcomes assessed in the review
The author did not state any inclusion criteria relating specifically to the outcomes. The effectiveness of the nursing interventions was evaluated according to three outcomes:

- patient outcome (patient satisfaction, quality of life, well-being, adherence to treatment regimen, self-efficacy and knowledge);
- socioeconomic outcome (hospitalisation, length of stay, admissions, use of health service and cost-savings); and
- clinical outcome (mortality, disability, blood-pressure, cholesterol-plasma level, blood-glucose control, weight, and symptoms of depression).

The content of the nursing interventions was evaluated in terms of the educational method and the amount of time spent with the patient during the study period.

How were decisions on the relevance of primary studies made?
The author 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 the primary studies was assessed with a checklist, based on criteria developed by the Cochrane Effective Practice and Organisation of Care Group. Six areas were evaluated: randomisation, follow-up, blinded assessment, baseline assessment, reliability of the outcomes, and protection against contamination. The author did not state how the papers were assessed for quality, or how many reviewers performed the quality assessment.

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

Summary data were extracted with the study outcomes classified as ‘+/− 3’ (significant positive or negative outcome), ‘+/− 1’ or ‘+/− 2’ (positive or negative outcome), or ‘=’ (no difference between intervention and control).

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
The results were tabulated and reported separately by participant group (elderly, diabetes and arthritis). The results were also discussed in terms of nurse educational levels.

Results of the review
Fifteen RCTs were included in the review: 6 studies (n=3,155) of elderly people living in their own home, 7 studies (n=1,368) of patients with diabetes, and 2 studies (n=280) of patients with arthritis.

The results, by type of chronic condition, showed that the majority of studies did not report statistically beneficial effects of the nursing intervention on the outcome measures assessed.

Older people.
Positive patient outcomes were shown in 3 studies in terms of increased confidence, greater patient satisfaction, or improved self-reported health status. Two studies evaluating economic cost demonstrated a positive effect of the nursing intervention. A further study demonstrated a negative effect, with increased costs in the intervention group. Positive effects of the nursing intervention on clinical outcomes were seen in 4 studies. Improved vaccination frequency, delayed development of disability, and a significant reduction in mortality were seen.

Diabetes.
Three of the 4 studies that assessed patient outcomes showed a positive effect of the nursing intervention on patient satisfaction, or self-efficacy. No differences were shown between the intervention and control groups in terms of economic cost. Four of the 5 studies that assessed clinical outcomes showed a positive effect of the nursing intervention in terms of blood glucose control, decreased blood-pressure and cholesterol, behaviour change, self-care knowledge, self-care skills, fewer symptoms of depression, and self-reported adherence to regimens.

Arthritis.
A positive effect of patient outcome was reported in one study for levels of knowledge, satisfaction with care, and pain. A negative effect of the nursing intervention on patient satisfaction was shown in the second study. The economic outcome was not assessed. Clinical assessments showed positive effects in both the intervention and control groups, with improvements in functional status and quality of life, and a fall in disease activity.

Cost information
Eight studies described an effect of cost, with two showing a positive effect and one a negative effect for the intervention group. Details of any cost-benefit were not well described.
Authors' conclusions
Patients with chronic conditions benefited from multiple, individualised, follow-up visits by nurses.

CRD commentary
The review question was mostly supported by clear inclusion and exclusion criteria. Several electronic databases were searched, although the author did not state whether any language restrictions were applied in the search strategy, or whether unpublished material was sought. It was thus possible that important studies might have been missed and bias consequently introduced. The author did not report the methods used to select the studies or extract the data; therefore, the potential for reviewer error or bias at these stages could not be assessed. The methodological quality of the primary studies was evaluated, and individual scores were presented for most studies.

The narrative synthesis seemed appropriate given the wide range of interventions and outcomes included in the review. The study outcomes were reduced to vote-counting of direction and statistical significance of effects, without any reporting of the effect sizes themselves, thus making it more difficult to interpret the results. In addition, there appeared to be some inconsistency between tabular and text descriptions of the results. Consequently, the author's conclusions appear to have been overstated.

Implications of the review for practice and research
Practice: The author recommended that nursing interventions, including multiple visits, should take place over the long term. It was also suggested that interventions should be individualised, using both educational and cognitive-behavioural approaches. In addition, the use of supportive telephone calls could be considered where patients are already engaged in problem-solving coping strategies.

Research: The author stated that further well-conducted RCTs are needed, in particular, investigations examining the long-term, follow-up of patients with chronic pain. The author recommended that future studies adopt Health Technology Assessment methods in order to enable replication between studies, and also suggested that researchers consider the impact of patient and nurse characteristics on the outcomes.

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