Effectiveness of gerontologically informed nursing assessment and referral interventions for older persons attending the emergency department: systematic review
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CRD summary
The review found that using nursing assessment and referral interventions for older people attending emergency departments reduced functional decline and hospital service use, but the included studies were inconsistent in their findings. Although authors’ cautious conclusions reflect the evidence, the potential for language and publication bias and lack of control groups for some studies mean their reliability is uncertain.

Authors' objectives
To evaluate the effectiveness of nursing assessment and referral interventions targeted at older people (over 60) attending of emergency departments.

Searching
The following databases were searched for papers published between 1992 and 31 August 2008 in English: CINAHL, PubMed, Science Direct and the Cochrane Central Register of Controlled Trials (CENTRAL). Search terms were listed in the review. Bibliographies of relevant articles were manually searched.

Study selection
Clinical trials, before-and-after studies and descriptive-evaluative studies of nursing interventions in participants (aged over 60) undertaken within an emergency department were eligible for inclusion. Studies of interventions classified as assessment and screening or referral and follow-up interventions were eligible for inclusion, but new programmes and care protocols were not. Studies were eligible if the intervention was undertaken by a nurse, or was a multidisciplinary intervention involving a nurse.

Interventions in the included studies were comprehensive geriatric assessments or risk assessment screening tools. In the included studies, outcomes were various measures of hospital/resource usage, physical, mental and functional ability and decline, patient satisfaction with and adherence to discharge instructions, death, nursing home placement, quality of life and change in caregiver health status. The included studies were based in Australia, Canada, USA and Scotland.

Two reviewers independently performed the study selection.

Assessment of study quality
The quality of clinical trials was assessed using a checklist designed by Grimshaw et al 2003, which assessed sampling, randomness, blinding, intention-to-treat analysis, intervention characteristics, and outcome measures. The authors stated that other study designs were appraised on the basis of intervention type, outcomes, and bias, but no further details were given. The impact of the methodological quality on the results of the review was considered.

Two reviewers independently performed the quality assessment.

Data extraction
Two reviewers independently performed the data extraction. Both primary and secondary outcome data were extracted.

Methods of synthesis
The results were analysed in a narrative synthesis, including study descriptions and measures of effectiveness.

Results of the review
Nine studies (approximately 6,715 participants) in 11 reports were included in the review. These included five randomised controlled trials (RCTs, n=2,464 participants), a quasi-RCT (n=388 participants), a non-randomised clinical
trial (number of participants not stated), and two before-and-after designs (n=3,863 participants).

No studies were excluded following the quality assessment. Five RCTs and one quasi-RCT reported randomisation method. No studies reported blinding of participants, but two studies reported on blinding or partial blinding of observers. Four studies reported an intention-to-treat analysis.

**Hospital resource usage:** One RCT and two before-and-after studies reported statistically significant beneficial effects of nursing interventions on hospital resource usage. One quasi-RCT reported mixed effects. Three RCTs and one non-randomised clinical trial reported no significant differences.

**Functional decline:** One RCT and one quasi-RCT reported improvements in functional decline at follow-up after nursing interventions. One RCT reported no significant differences between groups at 18 months follow-up.

**Patient well-being and satisfaction:** One RCT and one before-and-after study reported statistically significant beneficial effects of nursing interventions on various patient well-being and satisfaction outcomes. One RCT and one quasi-RCT reported no significant differences at follow-up.

One RCT found that interventions which incorporated a post-emergency department discharge planning and referral component appeared to be more effective.

**Cost information**
One quasi-RCT found that the intervention was no different in terms of cost effectiveness compared with control based on overall societal costs.

**Authors’ conclusions**
There was some benefit of using nursing assessment and referral interventions for older people attending emergency departments in terms of reduced service use and functional decline, but evidence of effectiveness must be accepted with caution as not all studies demonstrated effectiveness in predicted patient and/or health systems outcomes.

**CRD commentary**
The review addressed a clear research question, with study design, participant and intervention criteria well described. No outcome inclusion criteria were specified. Several relevant sources were searched but, as only published English language papers were eligible for inclusion, the results could have been affected by language or publication bias. The study selection, data extraction and quality assessment were performed by two reviewers to minimise errors.

Although the quality of the included studies was considered by the authors, no distinction was made between the quality of the results from RCTs compared with other study designs, some of which lacked a control group. The narrative synthesis used was appropriate given the heterogeneity of outcomes and differences in their measurement.

The authors’ cautious conclusions reflect the evidence presented. However, given the potential for language and publication bias, and lack of control groups for some studies, the reliability of their conclusions is uncertain.

**Implications of the review for practice and research**
**Practice:** The authors stated that routine comprehensive assessment and postdischarge referral of older patients in emergency departments may reduce service use and functional decline.

**Research:** The authors stated that further evidence of the effectiveness of nursing interventions is required, probably best investigated using pragmatic trials.

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