A systematic literature review of the effectiveness of non-pharmacological interventions to prevent wandering in dementia and evaluation of the ethical implications and acceptability of their use


CRD summary
This review concluded that there was no adequate, good-quality evidence from controlled trials to recommend the use of any specific non-pharmacological intervention to reduce wandering in people with dementia. This conclusion was based on a generally well-conducted systematic review and is likely to be reliable.

Authors' objectives
To determine the effectiveness and cost-effectiveness of non-pharmacological interventions (excluding subjective barriers), compared with usual care, for the prevention of wandering in people with dementia, and to evaluate the acceptability to stakeholders of such interventions and identify ethical issues associated with their use.

Searching
The authors searched 14 electronic databases; the search strategies were reported. The searches were supplemented with handsearches of reference lists from primary and review articles, journals, grey literature, conference proceedings and research registers. External and internal topic experts were also contacted for further studies. The searches were not restricted by language of publication.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), non-randomised controlled trials, controlled before-and-after studies, cohort studies (prospective and retrospective) and case-control studies (prospective and retrospective) were eligible for inclusion. Both randomised and non-randomised studies were included in the review.

Specific interventions included in the review
Non-pharmacological interventions to prevent wandering applied in any setting were included in the review. These included: physical barriers (e.g. alarms, locks); physical restraints (e.g. ropes, tethers, Buxton chairs, cocoon); electronic/technological devices (e.g. electronic tagging and tracking devices, alarm pads to detect movement from bed, or other electronic means of monitoring); behavioural interventions (e.g. cognitive-behavioural therapy, cognitive rehabilitation and reality orientation); multidisciplinary team interventions and/or carer interventions (e.g. education and training); prevention/distraction activities (e.g. music therapy, physical activity, planned walking); alternative therapies (e.g. homeopathy); sensory therapies (e.g. aromatherapy, multi-sensory environment, massage/touch).

Participants included in the review
The participants included in the review were people with acute or chronic cognitive impairment, of any age, who exhibited wandering behaviour. This included people with dementia (vascular, Alzheimer's disease, mixed (vascular and Alzheimer's) and Lewy Body, unclassified) and also people who were chronically cognitively impaired but did not fulfil the accepted criteria for the classification of dementia (e.g. people with mild neuro-cognitive disorder). People with a syndrome of acute cognitive impairment (delirium), with or without pre-existing chronic cognitive impairment, were also eligible.

Outcomes assessed in the review
Studies were included if they used any measure of the primary outcome of wandering behaviour. The included studies measured wandering behaviour in a variety of different ways. The secondary outcomes included: number and nature of accidents, number and cause of deaths, withdrawal from treatment, satisfaction with intervention, quality of life, anxiety or distress, and related costs.
How were decisions on the relevance of primary studies made?
Two reviewers independently screened studies for inclusion. Any disagreements were resolved by a third or fourth reviewer.

**Assessment of study quality**
The validity of the RCTs was assessed using published criteria relating to adequacy of randomisation, concealment of allocation, blinding of the outcome assessors and loss to follow-up. Additional information on individual or cluster randomisation and the comparability of the treatment groups at baseline was also recorded. Non-RCTs were assessed for concealment of allocation, blinding of the outcome assessors, comparability of the treatment groups at baseline and adjustment for potential confounders. Two reviewers independently assessed the validity of the studies.

**Data extraction**
Two reviewers independently extracted the data from the primary studies. Relevant details of study characteristics, methodological quality and outcomes were extracted and presented in tables and figures. Mean values with standard deviations were extracted where possible.

**Methods of synthesis**
**How were the studies combined?**
Where the studies were sufficiently homogeneous, they were pooled in a meta-analysis using a fixed-effect model and mean difference methods; 95% confidence intervals (CIs) were calculated. The outcomes of other studies were displayed in forest plots where possible and discussed in a narrative synthesis.

**How were differences between studies investigated?**
The studies were grouped by the type of intervention assessed. Further differences were discussed in the narrative synthesis.

**Results of the review**
Ten studies (n=492) were included: 7 RCTs and 3 non-randomised controlled studies.

Ten studies (7 RCTs and 3 non-randomised controlled studies) met the inclusion criteria. The interventions evaluated were multi-sensory environment (3 studies), music therapy (1 study), exercise (1 study), special care units (2 studies), aromatherapy (2 studies) and a behavioural intervention (1 study). There was no robust evidence to recommend any of these non-pharmacological interventions to reduce wandering in dementia.

There was some evidence, albeit of poor quality, for the effectiveness of exercise (1 small RCT) and multi-sensory environment on wandering (2 RCTs; mean difference 0.22, 95% CI: 0.02, 0.41).

**Authors' conclusions**
There was no adequate, good-quality evidence from controlled trials to recommend the use of any specific non-pharmacological intervention to reduce wandering in people with dementia.

**CRD commentary**
This was a generally well-conducted and reported systematic review. The review question was supported by broad but appropriate inclusion criteria. A range of electronic and other sources were used to identify relevant unpublished and published studies in any language. The quality of the individual studies was assessed appropriately, using criteria appropriate to the study design being assessed. Two reviewers were involved at all key stages of the review to minimise the potential for bias and error. Heterogeneity of the included studies was taken into account and appropriately informed the synthesis. The authors' conclusions appear appropriate given the evidence presented in the systematic review.
**Implications of the review for practice and research**

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

Research: The authors stated several implications for research, including the need for high-quality studies, preferably RCTs, to determine the clinical- and cost-effectiveness of non-pharmacological interventions that allow safe wandering. These interventions should be considered practically and ethically acceptable by carers and people with dementia. Large-scale, long-term cohort studies to evaluate the morbidity and mortality associated with wandering in dementia for people both in the community and in residential care are also required, as is research to investigate the views of people with dementia on the acceptability of non-pharmacological interventions to prevent wandering. All studies should report an explicit definition of the 'wandering' outcome used.

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**Bibliographic details**


**Original Paper URL**

http://www.hta.ac.uk/1384

**Other publications of related interest**


This additional published commentary may also be of interest. Forbes DA. Review: sparse evidence supports non-pharmacological interventions for preventing wandering in people with dementia. Evid Based Nurs 2007;10:15.

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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.