



Preventing and managing falls among older people with mental health problems: a systematic review.

Frances Bunn¹, Charles Simpson¹, Christina Victor³, Venkat Narayanan², Deborah Humphrey², Caroline Griffiths², Wendy Martin³, Angela Dickinson¹

¹ University of Hertfordshire, ² Oxford Health NHS Foundation Trust, ³ Brunel University. Contact for further information: email: c.m.simpson@herts.ac.uk

Background

Falls are a leading cause of mortality and morbidity amongst people aged 65 and over. Patients being cared for in in-patient mental health settings are at even greater risk of falling, due to impaired cognitive status, depression, dementia, or treatment with psychotropic medication.

A number of systematic reviews and guidelines have been developed to address the issue of fall prevention in older people, focusing on people living in the community and those without cognitive impairment. Reviews focused on people with dementia and cognitive impairment, but not those being cared for with other mental health conditions or in mental health settings.

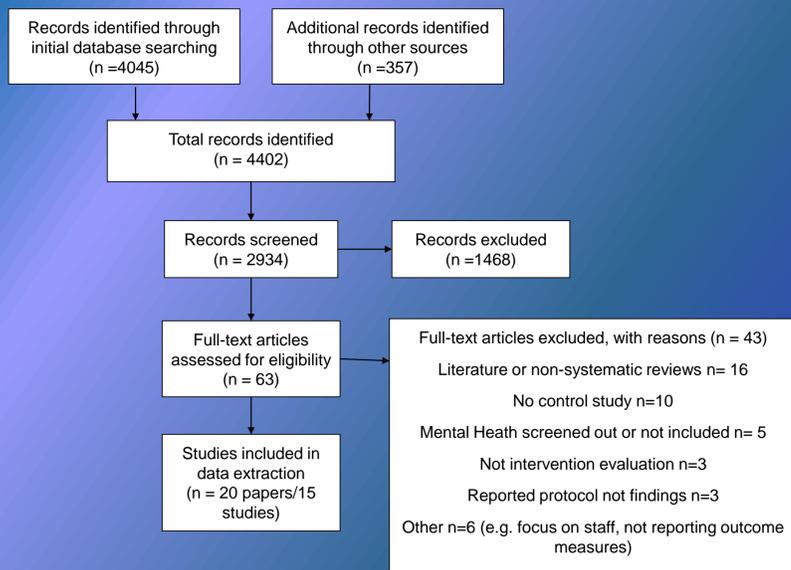
Methods

The objective of this review was to evaluate the effectiveness of fall prevention interventions for older people in mental health settings, or interventions delivered in other settings as long as the intervention was aimed at older people with a mental health problem. We addressed the following aims: (i) what interventions are effective in preventing and managing falls among older people with mental health conditions; and (ii) what evidence exists to underpin current local and national policies for falls management and prevention for older people with mental health problems.

We included randomised controlled trials, controlled evaluations and uncontrolled before/after studies of fall prevention interventions for people aged 65 and over with mental health problems such as dementia, depression or psychosis. Controlled studies that did not have a specific mental health focus were also included as long as at least a third of participants had a mental health problem. Uncontrolled studies were only included if they had a specific mental health focus. We included single focus or multi-factorial interventions involving environmental, physical, technological, psychological, educational, and health related components. Our primary interest was in studies delivered in inpatient and community mental health settings. However, we also included interventions delivered in other settings as long as the intervention was aimed at older people with a mental health problem.

The primary outcome of interest was falls and secondary outcomes included fall related injuries, service use and patient satisfaction. In addition, we searched for qualitative studies or process evaluations that identified barriers and facilitators to the implementation and uptake of interventions; in particular looking at whether specific guidance is required for this group.

Figure 1: Systematic Review Identification Flow Diagram



Findings

From 4402 articles searched 20 papers reporting 15 studies were selected for inclusion in the review (See Figure 1). Of these eleven were randomised controlled trials (RCTs), and four uncontrolled.

The review was carried out using methodology recommended by the Cochrane Collaboration. Included studies were assessed using the Cochrane risk of bias tool. This classifies the risk of bias on six quality domains. A summary of the risk of bias is given in Figure 2. Interventions and populations were not homogenous, and did not have significant heterogeneity; thus studies were not pooled in a meta-analysis.

Nine took place in nursing homes or residential care, one in an in-patient mental health setting, one in an in-patient non mental health setting, one in a respite day centre, one a geriatric outpatient clinic, and two in the community.

The nature of the interventions varied considerably and involved a variety of components including environmental modification, staff training, increased supervision, physical activity and exercise. Nine studies were multi-factorial and included components such as staff training, physical activity or training and environmental assessment. Of the unifactorial interventions three focused on staff awareness in the form of staff training, two on physical activity or exercise, and one an intervention that focused on environmental modification through the introduction of a wander garden.

Evidence relating to fall reduction was mixed. Of the ten studies that reported the number of people who fell, seven found a reduction in falls (statistically significant in six). However, three studies found an increase in falls in the intervention group compared to the control. There was very limited data on service use, and we found no data on barriers and facilitators.

We found evidence to suggest that multifactorial interventions are effective in older people with mental health problems. We also found insufficient evidence to support physical activity or exercise alone, but interventions involving increasing staff awareness or levels of supervision looked promising.

The evidence provided in this review does not provide sufficient evidence to produce specific guidance for practitioners providing care for older people with mental health problems or in mental health settings. However, it does not provide any evidence contrary to that provided in the current guidance of the NPSA (NPSA., 2011), or the joint guidance of the American Geriatrics Society, British Geriatrics Society and American Academy of Orthopaedic Surgeons (AGS, BGS, & AAOS, 2001). This review highlights the need for further research evaluating the effectiveness of fall prevention interventions for older people with mental health problems.

Figure 2: Risk of bias summary.

Study	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Bouwman 2008	+	+	+	+	+	+
Buether 2002	+	+	+	+	+	+
DeWeller 2005	+	+	+	+	+	+
DeWeller 2009	+	+	+	+	+	+
Faes 2011	+	+	+	+	+	+
Jensen 2002	+	+	+	+	+	+
Mackintosh 2005	+	+	+	+	+	+
Neyens 2009	+	+	+	+	+	+
Rapp 2008	+	+	+	+	+	+
Ray 1997	+	+	+	+	+	+
Rosemond 2008	+	+	+	+	+	+
Salmihari 2009	+	+	+	+	+	+
Shaw 2003	+	+	+	+	+	+
Shimada 2009	+	+	+	+	+	+
Stenvall 2007	+	+	+	+	+	+