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The use of volunteers to help older medical patients mobilise in hospital: a systematic review

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CONTRIBUTIONS

Study design: HCR and AAS. Data collection and analysis: AMB, SERL, HCR. Manuscript preparation: AMB, HCR, SEL and AAS all commented on draft versions of the paper and approved the final article.

CONFLICTS OF INTEREST

None

The use of volunteers to help older medical patients mobilise in hospital:

A systematic review

ABSTRACT

Aims and objectives

To review current evidence for the use of volunteers to mobilise older acute medical inpatients.

Background

Immobility in hospital is associated with poor healthcare outcomes in older people but maintaining mobility is frequently compromised due to time pressures experienced by clinical staff. Volunteers are established in many hospitals, usually involved in indirect patient care. Recent evidence suggests that trained mealtime volunteers had a positive impact on patients and hospital staff. It is unclear whether volunteers can help older inpatients to mobilise.

Design

Systematic review

Methods

We searched Cochrane, Medline, Embase, CINAHL, AMED and Google databases using MeSH headings and keywords within six key themes: inpatients, older, mobility/exercise, delirium, falls and volunteers. Full texts of relevant articles were retrieved and reference lists reviewed.

Results

Of the 2428 articles that were identified, two scientific studies and three reports on quality improvement initiatives were included in the final review. One study included volunteer assisted mobilisation as part of a delirium prevention intervention (HELP). The second study has not reported yet (MOVE ON). The contribution of volunteers in both is unclear. Three quality improvement initiatives trained volunteers to help mobilise patients. They were not formally evaluated but report positive effects of the volunteers on patient and staff satisfaction.

Conclusions

This review has identified a lack of scientific evidence for the use of volunteers in mobilising older medical inpatients, but quality improvement initiatives suggest that volunteers can be employed in this role with reports of staff and patient satisfaction: this is an area for further development and evaluation.

Relevance to clinical practice

This review outlines the evidence for the involvement of volunteers in maintaining patients' mobility, identifies mobilisation protocols that have been used, the need to train volunteers and for formal evaluation of volunteers in this role.

Prospero registration number: CRD42014010388

Summary box

What does this paper contribute to the wider global clinical community?

- Sedentary behaviour among older people in hospital is associated with an increased risk of physical and cognitive decline and loss of social independence but time-pressured hospital staff struggle to encourage mobility among older patients.
- Volunteers are well established in many hospital areas with recent evidence that they can help with direct patient care such as helping feed patients.
- This review has identified a global lack of published peer-reviewed evidence for the use of volunteers in helping mobilise older medical inpatients.
- Reports of quality improvement initiatives from USA and Australia suggest that hospital volunteers can be a useful resource in encouraging older inpatient to mobilise, with positive outcomes on patient and staff satisfaction.
- More well-designed studies are needed to formally evaluate the role of volunteers in assisting older people in mobility and its impact on health and hospital-related outcomes.

Keywords

volunteer, mobilisation, mobility, inpatients, older, hospital, walking, ambulation, systematic review

INTRODUCTION

Physical activity levels are low among older people and sedentary behaviour in those admitted to hospital typically exceeds the 18 hours per day reported for community dwelling older people (Golubic *et al.* 2014). Accelerometer based studies have demonstrated that 45 previously independent older medical male inpatients (mean age 74 years) in the USA typically spent only 43 minutes per day in an upright position i.e. standing or walking (Brown *et al.* 2009). Importantly, sedentary behaviour among older people in hospital is associated with an increased risk of physical and cognitive decline and loss of social independence (Brown *et al.* 2004, Wilson *et al.* 2012). It is also associated with sarcopenia (Sayer 2014). An American study of 11 healthy older adults who underwent 10 days voluntary bed rest demonstrated a significant reduction in lower limb strength (13%), and power (14%) (Kortebein *et al.* 2008) with a loss of almost 1 kg of lean tissue from their legs (Kortebein *et al.* 2007).

Factors contributing to the sedentary behaviour of inpatients include acute illness, staff availability and patient beliefs. An American study reported that the barriers to increased mobility most commonly described by patients, nurses and doctors were symptoms of weakness, pain and fatigue; presence of urinary catheters or intravenous lines; and concern about falls (Brown *et al.* 2007). A lack of staff to assist with mobility, an apparent lack of interest among ward staff in promoting mobility, and the absence of walking aids and appropriate clothing were also concerns. A recent qualitative study reported that for most patients exercise in hospital meant walking (So & Pierluissi 2012). Motivating factors included avoiding negative effects of bed rest (such as boredom, functional decline or pain and fatigue), improved sense of well-being, promotion of functional recovery as well as recommendation of exercise by health professionals. While only 27% of respondents recalled being encouraged to exercise by hospital staff, most (85%) felt that such encouragement would be a good motivation to undertake exercise while in hospital.

Current UK Department of Health guidelines on physical activity for adults aged 65 years and over recommend at least 150 minutes of moderate aerobic activity/week plus muscle strengthening exercises on 2 days (UK Department of Health 2013). Similar guidelines are published in the USA (US Department of Health and Human Services 2013). However there are no national guidelines for physical activity in hospital. There is silver (Cochrane Musculoskeletal Group grading of levels of evidence) level evidence from the 2007 Cochrane systematic review that targeted exercise intervention may be beneficial to older inpatients, resulting in an increased proportion of patients discharged home and reduced length and cost of hospital stay. However all of the studies included in the review (from the USA, Australia, Sweden and Netherlands) employed additional trained staff members to deliver the intervention (De Morton *et al.* 2007). A recent systematic review similarly reported that early rehabilitation programmes on acute geriatric wards may improve patients' physical function at hospital discharge, reduce length of stay and prevent patients from being discharged to a nursing home (Kosse *et al.* 2013). However the availability of staff to help patients mobilise is an issue in many countries. In the UK relatively low staff: patient ratios have been reported on medical wards for older people, with 9.1 - 10.3 patients per registered nurse compared to 6.7 and 4.2

patients on adult medical/surgical and paediatric wards respectively (Royal College of Nursing 2012). Promoting mobility was one of the aspects of care reported to be most frequently neglected due to time pressures according to 59% of nurses surveyed.

Volunteering is common in many countries, and in England it is estimated that up to 3 million people are involved in voluntary work within health and social care, in both the voluntary sector and in within public services (Naylor *et al.* 2013). Many hospitals have an established volunteer workforce who play an important role in improving patient experience in hospital through a number of important roles including befriending/visiting, signposting, hospitality/activities support (drink trolley, play assistant) and administrative support (Galea *et al.* 2013). Volunteers are typically rarely involved in direct patient care but the Southampton Mealtime Assistance Study has recently demonstrated that trained volunteers were able to safely assist older medical patients at mealtimes, including feeding, and were highly valued by patients and ward staff (Roberts *et al.* 2014). It is unknown whether trained volunteers could potentially help older medical patients maintain their mobility in hospital, supporting time-pressured staff and improving patients' healthcare outcomes. We were interested to review the research evidence for the involvement of volunteers in helping older medical patients mobilise in hospital.

AIMS

The aim of this paper was to provide a systematic review of studies describing the involvement of volunteers in mobilising older patients in acute medical wards.

METHODS

A systematic review of the literature was undertaken according to the systematic review guidelines from the Centre for Reviews and Dissemination from University of York (Centre for Reviews and Dissemination 2008). The study was registered with Prospero (registration number: CRD42014010388).

Inclusion criteria

The review included hospital based studies, projects or programmes in which volunteers assisted in the mobilisation of general medical inpatients aged 65 years and over. Multi – intervention trials were included if mobilisation was part of the protocol. We included all study designs to in order to capture the breadth of literature currently available. We did not exclude non-English publications and we did not use publication year limits. Studies were excluded if they were conducted in non-acute healthcare settings, in non-medical wards, or were limited to specific neurological conditions such as stroke as we were interested in the use of volunteers on general medical wards for older people.

Search strategy

Search criteria were created using a combination of subject headings (where available) and free terms. The terms were divided into three groups: terms related to the setting (Hospital and Aged), terms related to the intervention (Exercise/Mobility + Delirium+ Falls) and volunteer terms. The possibility of delirium and fall prevention programmes including volunteers as part of the intervention was reflected in the search terms. Boolean operators ‘AND’ and ‘OR’ were used to combine the searches. The electronic databases Ovid MEDLINE(R) 1946 to August Week 2 2015, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations August 19, 2015, Embase Classic + Embase (1947 – 2015 August 19), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Amed Allied and Complementary Medicine were accessed via EBSCOhost and Ovid SP. The Cochrane Library was searched using the terms: mobility, walking, older people, volunteers. In order to minimise publication bias the grey literature was reviewed. Google Scholar, Web of Science, Current Contents Connect, BIOSIS Citation Index, BIOSIS Previews and Zetoc were searched using a combination of terms: mobility, walking, project, volunteer, hospital, elderly, older, patients. Google was searched using broad terms: walking, hospital, older people, and volunteers: the first twenty pages were screened. Reference lists in retrieved articles were hand searched for relevant articles. The searches were performed in August 2014 and repeated in August 2015. The search strategy undertaken in Medline is presented in Table 1.

Article selection and data abstraction

Titles and abstracts of all potentially relevant studies were assessed against the inclusion criteria by two reviewers (AMB and HCR) working independently and any disagreements were resolved by discussion. Full texts of those articles selected by either author were retrieved and reviewed independently by both reviewers again to confirm that they met the inclusion criteria. Data were extracted from the articles included in the review by the two researchers working independently and using a pre-defined data extraction form. Information was extracted on study design, participants, training and intervention delivered by the volunteers, comparators used, analysis methods and reported outcomes. Statistical pooling of data was not conducted due to the wide variance in study design, intervention and outcomes between studies.

Quality of studies

Studies included in the review were assessed for methodological quality by two researchers working independently using published criteria with a maximum score of 27 points (Downs and Black 1998).

RESULTS

Search results

The total number of articles arising from the electronic database searches was 2425 (See Figure 1). Review of the titles and abstracts identified 24 articles which met the review inclusion criteria. After full text review, only twelve papers were still relevant, ten of which related to the Hospital Elder Life Program (HELP), 2 of them related to MOVE ON. Of the 12 studies that did not meet the inclusion criteria, the reasons for exclusion were due to the lack of mobility intervention (8 studies), the lack of volunteer involvement in the mobility protocols (3 studies) and limited information available in a single patient case report (1 study). The Google internet search additionally identified 3 reports of quality improvement initiatives (the Footprints Walking Program, the ACTIVE Program, and Mobility is Medicine). References cited in articles that met the inclusion criteria were screened but yielded no new results. No relevant non-English papers were identified from screening of English titles. The details of included studies are summarised in Table 2.

Quality of studies

Of the five studies evaluated by two researchers only one (HELP) received a high score of 22. The results of the MOVE ON study are yet to be published therefore we could not complete the quality assessment. The remaining 3 studies were not scored as they were published as abstracts and there was insufficient data to assess the quality of their conduct.

Study characteristics

The five studies included in the review consist of a large controlled clinical trial (N=852) based in a teaching hospital (HELP), a published protocol of a multicentre intervention trial using interrupted time series design (MOVE ON), and three quality improvement initiative reports (The Footprints Walking Program, ACTIVE Program, and Mobility is Medicine). Three studies were conducted in the USA (HELP, Footprints Walking Programme and Mobility is Medicine), one in Canada (MOVE ON) and one in Australia (ACTIVE Program). All studies involved trained volunteers in mobilising older people in an acute hospital setting. In three studies, volunteers were trained specifically to encourage mobility of older inpatients and in two studies, mobility was one aspect of more comprehensive care provided to patients which included activities, interaction, and nutrition. Each study, including its mobility protocol and involvement of volunteers will be presented individually.

The Hospital Elder Life Programme (HELP)

The Hospital Elder Life Programme (HELP) (www.hospitalelderlifeprogram.org) is a model of care designed to prevent delirium and functional decline among hospitalised older patients (Inouye *et al.* 1999, Inouye *et al.* 2006, Sandhaus *et al.* 2006). The programme aims to involve multidisciplinary staff and trained volunteers in the delivery of protocols addressing six risk factors for delirium; orientation, therapeutic activities, early mobilisation, vision and hearing

protocols, oral volume repletion and sleep enhancement. The programme has been demonstrated to be effective in preventing and managing delirium and functional decline in sites in the USA and Australia (Rubin *et al.* 2011). It has been disseminated to over 60 acute and community hospitals in the US (Bradley *et al.* 2006), Australia (Caplan and Harper 2007), Taiwan (Chen *et al.* 2011) and Canada (John 2013).

The early mobilisation protocol comprises ambulation or active range-of-motion exercises performed three times daily, but it is reported to have been implemented less often and less completely than the other protocols (for example 84% for mobilisation protocol versus 96% for orientation protocol) (Inouye *et al.* 1999). A majority of the protocols are implemented by the volunteers under the guidance of the Elder Life Specialist and Elder Life Nurse specialist. However, the extent of the involvement of volunteers (rather than healthcare professionals) in delivering the mobility protocol is unclear. Volunteers were involved with the basic and enhanced mobility protocols at the community teaching hospital linked with the original site but implementation of these protocols was delayed because of an initial shortage of volunteers (Rubin *et al.* 2011). Replication of the HELP programme at another community hospital in New Jersey did not include the mobility intervention because of reported staffing limitations (Zaubler *et al.* 2013).

The HELP programme is currently being evaluated in the UK as part of a Prevention of Delirium programme in eight hospitals on geriatric and orthopaedic wards (Young 2009). However it is unclear whether the protocols will be delivered by trained staff or volunteers (personal communication J Young) and an initial participatory research study (Godfrey *et al.* 2013) which examined current knowledge and practices relating to delirium and delirium prevention in three UK hospitals found that the current practice of volunteer employment on the wards was not consistent or reliable. The authors recommended that there should be a clear support system in place to enable volunteers' participation in care and better communication with staff members.

In the Netherlands, the cost-effectiveness of the HELP programme is also being evaluated over a period of 18 months in eight hospitals, and the experiences of patients, families and staff will be explored through qualitative methods. It is reported that volunteers will have an important role in the study stimulating patients to eat, drink and walk (Strijbos *et al.* 2013).

Mobilisation of Vulnerable Elders in Ontario (MOVE ON)

The MOVE ON project started in February 2012 and aims to improve the mobility of older inpatients and prevent functional decline across 26 hospitals in Ontario, Canada (Straus & Liu 2012). This project aims to implement a progressive, scaled mobilisation of participants at least three times per day as well as a mobility assessment and care pathway within 24 hours of admission and results are awaited. Some of the hospitals (Sunnybrook Hospital and St Michael's Hospital) are reported to be using volunteers in addition to paid staff. However, the extent of volunteer involvement is unclear since the published protocol for MOVE ON does not detail the involvement of volunteers (Liu *et al.* 2013). Additionally a recent paper

reporting the development of a mapping guide to support the intervention by linking identified barriers and intervention activities did not report any contact with volunteers (Moore *et al.* 2014).

The Footprints Walking Program

The Footprints Walking Program was implemented as a clinical quality improvement initiative in one acute hospital in the US (Boyd & Lipowich 2011). The objectives of the project were to maintain mobility and prevent deconditioning during hospital stay, with the aim of reducing length of stay, prevent complications of bed rest and increase patient and staff satisfaction. Over 50 trained volunteers assisted adult inpatients in daily 15-minute walking sessions and 20-25% of the inpatients were reported to take part every day. The project outcomes reported were increased patient and staff satisfaction and reduced length of stay. However, this programme was just one of many hospital-wide clinical service improvements and as such the outcome cannot be attributed solely to the volunteer-assisted mobilisation scheme.

ACTIVE Program – Aged Care Therapeutic interventions by Volunteers

The ACTIVE Program - Aged Care Therapeutic interventions by Volunteers – was developed in one acute ward for older people at an Australian hospital (Tawbe 2011). Twenty volunteers were trained to provide a range of interventions aimed at improving patients' experience and preventing functional and cognitive decline. The interventions included meal assistance, mobility assistance, companionship and therapeutic activities. Within a few months of implementing the programme an exercise class was created to engage patients in regular activity twice a week. Reported outcomes of the programme included a decrease in the frequency of one-to-one nursing care required for the patients at risk of falls and those with delirium, greater family involvement in patient care while in hospital as well as increased patient and staff satisfaction.

Mobility is Medicine

The Mobility is Medicine pilot project was implemented in 2011 on two acute care medical nursing units in a hospital in the USA (Eaniello *et al.* 2011). The aim of the programme was to increase the frequency of patient mobilisation, to improve communication around mobilisation and to increase the accuracy of nursing documentation. Six college student volunteers were recruited and received 3 hours of training with a physiotherapist and several hours of supervised practice. They delivered 200 mobility encounters during a period of three months, mainly walking the patients in the hallway. The intervention was not formally evaluated but the authors reported improvements in nursing documentation of patient mobilisation, patient reported mobilisation, and observed discussion of patient mobilisation by nursing staff in handover meetings as well as positive patient and staff perceptions of the programme.

DISCUSSION

This systematic review has identified a lack of scientific trials specifically designed to study volunteer-assisted mobilisation in older acute medical inpatients. The best current evidence comes from the well-designed and evaluated clinical controlled trials of the HELP programme that included volunteers. However, the aim of this programme was to prevent delirium, and so the primary outcomes did not include mobility or functional level. Furthermore, the mobility protocol appears to have been one of the more difficult to implement in several different settings and it is unclear to what extent volunteers rather than clinical staff were involved with this protocol. The MOVE ON study in Canada has yet to report and again it is unclear to what extent volunteers will be involved in helping older inpatients mobilise. Three small quality improvement initiatives, the Footprints Walking Program and Mobility is Medicine in the US and the ACTIVE Program in Australia, involved trained volunteers in mobilising patients and were reported to be acceptable and regarded as useful by patients their families and staff but were not otherwise formally evaluated.

Many hospitals have an established volunteer workforce, whose tasks are typically centred on talking to patients, helping with refreshments for patients and staff, conducting patient surveys and administrative support for clinical staff. As an example of volunteer involvement in direct care, the Southampton Mealtime Assistance Study showed that volunteers can be successfully trained to help older patients at mealtimes, including feeding them, without any adverse incidents (Roberts *et al.* 2014). The benefits of early mobilisation of adult inpatients are well recognised and include physical effects (improved physical function, fewer medical complications), psychological effects (less anxiety, depression and emotional distress), social effects (improved quality of life and independence) and organisational outcomes (reduced length of stay and cost) (Kalisch *et al.* 2014). Trained volunteers could potentially help promote increased mobility among older people during hospital admission and support time-pressured staff but further research is required to evaluate this extension of the volunteers' traditional role.

The lack of a controlled trial to evaluate the use of volunteers to mobilise older inpatients is a limitation and there is a need to establish whether volunteers can deliver this intervention effectively. Future research should focus on using robust research methods to establish the feasibility and acceptability of training volunteers to mobilise older inpatients, with particular emphasis on providing a detailed description of the training and retention of volunteers, the delivery of the mobility protocol, and its effect on patient outcomes. The five studies in this review did not report on adverse outcomes, which is an important aspect in the context of this patient group and the intervention involved. Cost analysis is also important to determine the sustainability of the intervention and help guide health service managers considering the implementation of volunteer mobility programmes.

Limitations

The review identified only one study which was assessed as being of high quality (the HELP programme) and so the main limitation of this review is the lack of evidence on the efficacy of the volunteers in delivering the mobility intervention. The published articles on the MOVE ON study do not yet include any participant details or outcomes. The three quality improvement initiatives provided some valuable insight regarding the use of volunteers in mobilising older people but the application of their findings is limited due to the lack of information provided. It is possible that other examples of small scale quality improvement initiatives were not identified.

CONCLUSION

Sedentary behaviour among older people in hospital is associated with an increased risk of physical and cognitive decline and loss of social independence. It is well recognised that early ambulation programmes and maintaining patients' mobility can improve healthcare outcomes but time-pressured hospital staff struggle to encourage mobility among older patients. Volunteers are well established in many hospital areas with recent evidence that they can help with direct patient care such as helping feed older medical patients safely. We were interested to know whether, with appropriate training and support volunteers could potentially help older medical patients maintain their mobility in hospital, supporting time-pressured staff and improving patients' healthcare outcomes. This review has identified a lack of published peer-reviewed evidence for the use of volunteers in helping mobilise older medical inpatients, but reports of quality improvement initiatives suggest that volunteers can be employed in this role with reports of staff and patient satisfaction: this is an area for further development and evaluation.

RELEVANCE TO CLINICAL PRACTICE

Nurses and other clinical staff are well aware of the benefits of maintaining the mobility of older medical patients but competing tasks often mean this is difficult to achieve in a time – pressured ward environment. Currently the mobility of patients is the responsibility of ward staff. This review outlines the evidence for the involvement of volunteers in maintaining patients' mobility, identifies mobilisation protocols that have been used in studies and quality improvement initiatives, the need to train volunteers and the need for formal evaluation of volunteers in this role.

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Table 1. Search strategy for : Ovid Medline (R) + Non-indexed (1947 – August 2015)

20-08-15

	Terms related to the setting	Number of articles
1	exp Inpatients/ or (inpatient* or in-patient* or hospitali#ed or ward*).ti,ab.	1292146
2	exp Aged/ or exp Ageing/ or exp Geriatrics/ or ((geriatr* or elder* or old*) or (6#year* or 7#year* or 8#year*)).ti,ab.	3246120
3	1 and 2	553634
	Terms related to the intervention	
4	exp Exercise/ or exp Exercise Therapy/ or exp Exercise Movement Techniques/ or exp animal assisted therapy/ or exp exercise movement techniques/ or exp musculoskeletal manipulations/ or exp Walking/ or exp Physical fitness/ or exp Rehabilitation/ or (rehabilit* or physical therapy or physiother* or (strength* adj 3 train*) or exercise* or walk* or ambulat*).ti,ab.	1059621
5	exp Delirium/ or exp Confusion/ or (delir* or confus*).ti,ab.	52150
6	exp Accidental Falls/ or fall*.ti,ab.	153600
7	4 or 5 or 6	1241718
8	3 and 7	53457
	Volunteer terms	
9	exp Voluntary Workers/ or exp Hospital Volunteers or (volunt* or unpaid or charit*).ti,ab.	200002
10	8 and 9	1153
11	exp stroke/ or (CVA or stroke or cerebrovascular accident).ti,ab.	182221
12	10 not 11	1030

Table 2. Description of the components of PICO in the systematic review

Population	General medical inpatients aged 65 years and older admitted to an acute medical healthcare setting. Specific neurological conditions such as stroke were excluded to reflect the general medical ward for older people setting.
Intervention	Any studies that involved volunteers in mobilising patient, whether partially or completely, were included in the review.
Comparison	Usual care
Outcome	Any physical and mental health outcomes, receipt of care, patient and staff satisfaction.

Table 3. Outline of studies identified

Study name Authors (date)	Study design and setting	Population	Intervention	Comparator	Outcomes	<u>Volunteer role</u>
The Hospital Elder Life Program (HELP) Inouye SK et al. (1999)	controlled clinical trial 1 acute hospital, USA	852 patients aged 70 years or older (61% female), acute general medical services Number of volunteers not reported	multicomponent strategy for reducing delirium targeting cognitive impairment, sleep deprivation, immobility, visual and hearing impairment, dehydration	Usual care	significantly lower incidence of delirium in the intervention group OR 0.6 (95% CI 0.39-0.92) and reduced length of delirium. Overall adherence to intervention 87% (84% for early mobilisation). Reduction of risk factors for delirium in the intervention group	<u>Volunteers worked as part of a multidisciplinary team which included geriatric nurse specialists, elder life specialists, therapeutic recreation specialists, physical therapy consultants and geriatricians to deliver the multicomponent intervention which include mobility. More detailed information regarding the role of volunteer is not available</u>
MOVE ON (Mobilisation of Vulnerable Elders in Ontario) project Straus S (2013)	multi-centre study, interrupted time series design	general medical inpatients aged 65 years and older, total number not reported	mobility assessment and care pathway implemented within 24 hours of admission, progressive scaled	Usual care	primary outcome: frequency of patient mobilisation secondary outcomes: length of stay, ADL on admission and discharge, discharge destination, falls, injurious falls, perceptions and satisfaction of	<u>The extent of volunteer involvement is not clear. Some hospitals have included volunteers in the delivery of the programme but more detailed information is not available</u>

	14 acute Canadian hospitals	Number of volunteers not reported	mobilisation at least 3 times a day		patient/caregivers and staff obtained, rate of documentation	
Footprints Walking Program Boyd D (2011)	quality improvement initiative 1 acute hospital, USA	acute general medical patients, total number not reported Number of volunteers: 50	daily patient ambulation seven days a week	None	20-25% of patient participation, patients, staff and volunteers report satisfaction with the programme	Volunteers were scheduled to encourage patients to walk 7 days a week. Suitable patients were identified by trained nurses
ACTIVE Program The Aged Care Therapeutic Interventions by Volunteers Tawbe R (2011)	quality improvement initiative, 1 acute hospital, Australia	266 older acutely hospitalised patients Number of volunteers: 20	assistance with mealtimes, walking companionship, and therapeutic activities	None	266 patients visited, 1020 interventions, 55 attendances at the exercise class established twice a week, better orientation of patients, decrease in 1:1 nurse specials, encouragement of family involvement in hospital care	Volunteers provided 1 of 4 main interventions including mealtime assistance, mobility assistance, companionship and therapeutic activities which were carried out daily with exercise classes twice a week
Mobility is Medicine Eanniello M (2011)	quality improvement pilot project,	1 acute general medical ward and 1 medical oncology	mobilisation and assisting staff in mobilisation of patients	Usual care	200 volunteer mobility encounters, increase in nurse initiated and assisted patient mobilisation, improved	Volunteers independently mobilised patients deemed safe by the physical therapist or nurse;

	1 acute hospital, USA	ward, total number of patients not reported Number of volunteers: 6			reporting of patient mobility status (by 34-40%), uniformly positive perception of the value of the programme among staff and volunteers	They also assisted therapy / nursing staff to mobilise patients requiring assistance by more than one person, and assisted patients to prepare for planned mobilisation sessions and wellness workout
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Figure 1. PRISMA flow diagram of search results

