

Physical activity in hospitalised older people: The feasibility and acceptability of a volunteer-led mobility intervention in the SoMoVe Study

Background

The adverse effects of hospitalisation on older adults are well recognised, for example it is estimated that between 30-60% of older inpatients experience functional decline at discharge[1, 2]. Functional decline among older inpatients, also known as hospital-associated deconditioning, significantly impacts on their independence, ability to self-manage and quality of life. Age, pre-hospitalisation functional status, cognition, mood and length of hospital stay are important predictors of functional decline among older inpatients[3]. Physical inactivity is also an important risk factor for hospital-associated deconditioning among older inpatients[4]. A study by Brown et al in the US found that patients with the lowest mobility levels had over five times the odds of functional decline compared to patients with the highest mobility levels[5]. Low activity levels during hospitalisation is a ubiquitous problem with studies from US, Ireland, UK, Denmark, and Australia demonstrating low mobility levels[6-8], and prolonged bed rest[9, 10] among older inpatients.

Previous studies of mobility and exercise interventions among hospitalised older people have shown benefits including reduction in length of stay[11, 12], improvement in functional outcomes[13] and reduction in admission to nursing homes[14]. The mobility and exercise protocols in these studies were mainly delivered by healthcare professionals[15]. In busy clinical settings, limited capacity for nursing and therapy staff to assist regularly with mobility may contribute to low levels of physical activity (PA) levels amongst patients. In the UK the Royal College of Nursing reported that 59% of nurses felt that promoting mobility was one of the aspects of care most frequently neglected due to time pressure[16]. Such challenges are common to many healthcare services and innovative ideas to encourage increased PA in older inpatients are needed to prevent hospital-associated deconditioning.

Volunteers are an important resource within healthcare settings who may bring multiple benefits to the organisation and to patients as well as gaining the benefits of reciprocity. There is increasing awareness that volunteers can be involved in direct patient care[17] yet a recent review by Baczynska et al found only four papers that described the use of trained volunteers to promote increased PA among older inpatients [18]. The review reported little evidence of use of mobility volunteers and found that the best evidence of using volunteers to mobilise older inpatients comes from North America where the Hospital Elder Life Program was designed as a model of care to prevent delirium and functional decline among older inpatients[19]. Volunteers were trained to

work alongside paid staff to deliver multidimensional care including mobilisation. However challenges such as a lack of available volunteers and liability concerns, have been cited as challenges to implementing the mobility protocols[20]. A better understanding of the complexity of implementing volunteer-led mobility interventions in busy clinical settings is required to ensure that such initiatives are practical, safe, and sustainable. The main aim of this study was to determine the feasibility and acceptability of implementing a volunteer-led mobility intervention in an acute care setting. A secondary aim was to explore the impact of the intervention on patient outcomes. To the authors' knowledge, this is the first study to explore the use of trained volunteers to mobilise older people in a UK hospital setting.

Methods

Study design

This pre-post mixed methods study was conducted on the acute medical wards for older people in one UK hospital. The feasibility of delivering the training programme was assessed through the number of training sessions delivered and feedback from volunteers on the training programme. The rate of recruitment, training and retention of volunteers, and patient compliance with the intervention were measured to determine the feasibility of implementing the intervention. Interviews and focus groups were conducted to determine the acceptability of the intervention. Normalisation Process Theory (NPT) [21] provided the theoretical framework for development and evaluation of this study(Supplement 1).

Patient recruitment

Patients were eligible for inclusion if they were mobile prior to admission and able to provide written consent. Patients isolated for infection-control reasons or receiving palliative care were excluded from the study. Patients who were unable to consent were excluded as volunteers would require further training to perform exercises with patients with severe cognitive impairment, which was beyond the scope of this feasibility study. Data on patient demographics including age, gender, body mass index, mini-mental state examination (MMSE), Barthel Index, and Geriatric Depression Scale were collected. Other clinical characteristics of multimorbidity and markers of frailty were recorded including the Charlson Comorbidity Index, number of medications, Frail scale, grip strength and gait speed. This allowed comparison of participants' characteristics between the baseline and intervention group.

Fifty participants recruited between February and July 2016, prior to the implementation of the volunteer-led PA intervention, formed the baseline group receiving usual care which were used for comparison. Participants receiving usual care were seen by therapists on average twice weekly until

they were functionally back to baseline or when they had reached a new baseline. The recruitment and training of volunteers started in July 2016 and completed in January 2017. Recruitment of 50 participants who received the volunteer-led mobility intervention began in August 2016 and concluded in April 2017.

Volunteer recruitment and training

Volunteers were recruited through the hospital voluntary service. Volunteers were assessed as competent by the trainers, based on the volunteer competency checklist (supplement 2), before working independently with patients. The training programme was developed and delivered by a senior physiotherapist and a physician and consisted of theoretical and practical sessions. The training package covered topics which included patient and personal safety, mobility and exercise training and response to adverse events such as falls. The practical sessions included practice mobilising and exercises with peers and closely supervised sessions with patients.

Intervention

The intervention comprised of twice-daily volunteer-led mobility or bedside exercises on the wards, based on a review of current literature[18] and expertise of senior hospital therapists. The mobility protocol and exercises were adapted to ensure that they were deliverable in routine clinical practice. Participants were assessed by the therapy team who prescribed individualised activity (supplement 3). Participants who were independently mobile were encouraged to walk a prescribed distance, guided by distance markers in the ward corridors. Participants who needed assistance to walk performed chair or bed exercises (supplement 4). Volunteers checked with nursing staff that participants were safe to participate in each activity session. Participants performing bedside exercises who progressed to be independent in their mobility were encouraged to walk by volunteers as soon as their activity prescription had been updated. Volunteers were trained to inform staff members of any adverse events such as falls or physical injury and record them in the activity prescription sheet. This study was approved by the South East Coast – Surrey Research Ethics Committee (15/LO/2091) and is registered on ClinicalTrials.gov (NCT02594527).

Assessment of feasibility

The main outcome measures were the feasibility of delivering the training programme and the intervention. Data collected include the number of training sessions delivered, the number of volunteers recruited and progressed to complete the training and competency assessment, and the retention rate of volunteers at the end of the study. Volunteers' views regarding the training programme were explored through qualitative interviews. To determine the feasibility of implementing the volunteer-led intervention on the wards, the number of PA sessions offered and

completed by patients, the reasons for non-compliance were recorded. The information was recorded by volunteers on the activity prescription sheet after each activity session. Cost-analysis was conducted to estimate the cost of training a volunteer. This included costing the trainers' time and additional costs such as travel and food reimbursement for volunteers.

Assessment of acceptability

Qualitative interviews and focus groups were conducted among four key stakeholder groups - patients, nurses, therapists and volunteers, to determine the acceptability of the intervention. Individual interviews were conducted with patient participants to explore their personal experiences of the intervention. Focus groups were conducted among nurses, therapists and volunteers to explore their shared experience including barriers and facilitators of the intervention. Purposive sampling of participants aimed to capture a range of opinions from key stakeholders. Patient participants of varying age and mobility levels were selected to be interviewed. Nurses and therapists, with varying age group, seniority and gender mix, were invited to participate. Volunteers with a range of volunteering experience, age groups and gender mix were selected. Interviews and focus groups were audio recorded and transcribed verbatim. Data analysis, coding and data interpretation were performed by two researchers (SL and KI) using thematic analysis[22].

Secondary outcome measures

Daily step count was measured using the StepWatch Activity Monitor (SAM) (Modus health, Washington, US) from recruitment for seven days or until discharge, whichever came first. Other receipt of care measures included length of stay, and 30-day hospital readmission. Descriptive statistics were used to summarise participants' clinical characteristics and receipt of care in the baseline and intervention phases of the study. The SAM data were analysed using the software provided with the device. Mean daily step count was calculated based on the total number of steps taken divided by the number of days of valid recording. A recording was considered valid if there was a complete 24-hour monitoring period. Statistical analysis was conducted using the statistical software SPSS version 22.

Patient and public involvement

Older people were involved in the development of the study. A survey of 92 older adults attending lunch clubs on the role of volunteers, supported the idea of training volunteers to help with mobility[23]. Public and patient involvement (PPI) was also involved in reviewing key documents such as the lay summary and patient and volunteer information sheets. The study protocol was reviewed by two PPI representatives who were supportive of the study. The main concerns raised were regarding training and support of the volunteers to ensure that patients were not adversely

affected by the proposed intervention. PPI representatives were also present at research meetings and provided input throughout the study period.

Results

Feasibility of the training programme

Five group training sessions were conducted, and each volunteer received a further four hours of individually supervised training. Twenty-six volunteers expressed an interest, 17 were recruited and 16 completed their training (Figure 1). One volunteer discontinued as she felt that she lacked the confidence to carry out the role successfully. 12/16 volunteers were retained at the end of the study period. Four volunteers discontinued due to ill health (3) and house move (1). Volunteers' ages ranged from 17 to 66 years, half were students and 75% had previous volunteering experience. Overall, volunteers felt that the training programme was good, and they were well-prepared for their role. This was also reflected in the confidence that patients and staff members had in them.

I would say the training programme was quite thorough because I had at least three or four training sessions, so I could get used to as many kinds of scenarios I may be presented with. And I think that was really useful because it's quite easy to forget things but doing the training over and over again helped to cement things in my head. (Volunteer A)

One patient commented:

It is done with people who really know what they are doing, what to suggest, and what exercises you need to do in order to improve your mobility. (Patient B)

Feasibility of the intervention

Participants in the baseline and intervention phases were similar in characteristics including age, functional status, cognition and frailty markers (Table 1). Fifty baseline participants (mean age 87 years, SD 4.6) with a median Barthel Index of 77 (IQR 54-90) and a MMSE of 25.5 (IQR 22-27) were recruited. 50 participants (mean age 86 years, SD 5.1) with a median Barthel Index of 80 (IQR 58-92) and a median MMSE of 26 (22-28) received the volunteer-led intervention. 310 PA sessions were offered and 230 (74%) were completed. The reasons for non-completion of PA session included clinical reasons such as patients receiving nursing care or away for imaging or other treatment (20%), tiredness (19%), no reason given (19%) and feeling unwell (18%).

Acceptability of the intervention

Six patients (aged 82 – 94 years; three males), six volunteers (aged 17 – 62 years; two males), seven therapists (band 3 -7; all female) and six nurses (student – band 8; four females) were interviewed.

Results are presented under four main emergent themes: recognising the importance of physical activity, appreciating the value of volunteers, developing a shared commitment to the intervention, and facilitators and barriers to the intervention.

Recognising the importance of physical activity

Nurses and therapists were aware of the adverse effects of physical inactivity and appreciated the potential benefits of the intervention in encouraging maintenance of PA levels and preventing functional decline. Patients and volunteers also showed understanding of the importance of being physically active.

'I think it's a matter of keeping the body mobile which is the important thing. I've been in hospital now six times with pneumonia and fortunately, and luckily for me, I'm physically fit I can get out of bed every day. Yeah, so to get somebody mobile I think is half the way to getting them better'. (Patient C)

All four key stakeholders demonstrated coherence in the relevance of implementing the volunteer-led PA intervention. One staff member highlighted:

I think having the mobility volunteer intervention come up has been a very good idea. There are loads of people would benefit from it. It's a very good study and, if it can be rolled out to everybody that is appropriate, it would be good. (Therapist D)

Appreciating the value of volunteers

Staff members expressed their appreciation of the mobility volunteers. They acknowledged the challenges they face with limited staffing and time to promote increased mobility and valued the time offered by volunteers to support them in that role. Volunteers were viewed as part of 'the team' and were well supported by staff members on the wards.

I consider them as part of the team. They're an asset to the team. Anyone who comes in and provides that extra bit of service, it's a good thing.... Like I said, talking about time before, we should have time, but we haven't, and that's the role they've been playing, which is a very vital support role to us. (Nurse E)

Developing a shared commitment to the intervention

Patients, volunteers, and healthcare professionals all demonstrated commitment to engage with and contribute to the intervention. Volunteers were motivated in their role and committed to ensuring that the intervention was delivered safely. Volunteers shared their reasons for engaging as mobility volunteers and one commented:

My eldest daughter was in hospital from the age of 3 to 25 here and I just felt that I wanted to give something back after the care she was given. And, having had parents, elderly parents that have had mobility problems I understood what was needed, and I just thought I could help in that way. (Volunteer F)

Nurses and therapists felt that the intervention would benefit patients and were keen for it to be implemented into routine clinical practice. Staff members commented that patients were also engaged with the intervention:

I think I've seen a positive aspect as well. When you are in the bay and one of the volunteers comes in, and they are mobilising and going through the exercises, other patients are trying to join in the exercises that they are going through..... There is a lot of engagement from the patients, which I find really nice. (Therapist G)

Volunteers also found that staff members were supportive of them on the wards. They showed commitment in working together to encourage patients to be more active.

There was one patient that was in a bed and a member of staff, I think it was a nurse, he insisted on helping get the patient out of bed and into the chair, so he could do the chair exercises. Yeah, I think they've been very helpful. (Volunteer H)

Facilitators and barriers to the intervention

Facilitators and barriers to the intervention were identified through the interviews (Figure 2). They were categorised under four factors: clinical, staff, patient and volunteer factors. Clinical factors such as the busy clinical environment, space limitation around patient's bed space, frequent patient transfers and physical restrictions such as urinary catheters and intravenous medications were cited as barriers to the delivery of the PA intervention. Volunteers also found the ward environment to be intimidating initially. However, as they became familiar with their role, it became less of a concern. Other challenges include the lack of staff awareness of the intervention and a lack of appreciation demonstrated by staff members. Important patient factors that facilitated the intervention included the perceived benefit of the intervention by patients and the positive experiences they had. Another commonly cited benefit was the social aspect of the intervention. Volunteers were viewed as non-medical personnel and were able to build rapport with patients and encourage them to mobilise or exercise. Volunteers were perceived by staff members to be competent in carrying out their role and staff members appreciated the work that they did in promoting increased PA among older inpatients.

Overall, the intervention was well received by patients and staff members appreciated the work that the volunteers did in promoting increased PA among older people. One study participant reported:

Would I have done it if he had not have come in? I might not have done. It is having the volunteers; they encourage you to have a go. I think the more chances patients are given for activity I think they will all get well quicker. No doubt about it. I feel good now, and I want get home. So yeah. I think mobility is a very important thing for everybody. (Patient I)

Secondary outcome measures

Forty-two participants from the baseline phase had valid SAM recordings with a median daily step count of 636 (IQR 298-1468). Forty-four participants in the intervention phase had valid SAM recording, with a median daily step count of 912 (295-1824). The median length of stay for baseline participants was 15.5 days (IQR 7 – 28), as compared to 15 days (IQR 8 -22) among those who received the intervention. 30-day hospital readmission among participants in the intervention group was slightly lower (18%) compared to the baseline group (30%). Importantly, no adverse events such as falls, or physical injury were reported. The cost of training a volunteer was estimated to be £313.

Discussion

This study has demonstrated that it was feasible to deliver a volunteer-led mobility intervention for older inpatients including the recruitment, training and retention of volunteers. The training programme adequately prepared volunteers for their role and volunteers enjoyed working with patients in the acute setting. The intervention was highly acceptable to healthcare professionals and patients. Patient participants were motivated to perform the exercises and appreciated the social interaction with volunteers. Nurses and therapists valued the help provided by volunteers to encourage older inpatients to be more active. Volunteers were viewed as part of the team. Barriers and facilitators to the intervention were identified which will aid future implementation studies. There were some encouraging trends in daily step count, length of stay, and 30-day readmission but these preliminary findings need to be confirmed in a larger controlled trial.

Few studies have examined the use of trained volunteers to encourage older inpatients to be more physically active[18]. The Hospital Elder Life Programme (HELP) in the US is a well-evaluated model of care designed to prevent delirium and functional decline among older inpatients[19, 20]. In this model of care, volunteers were trained to work alongside multidisciplinary staff to deliver protocols for improved orientation, therapeutic activities, early mobilisation, vision and hearing, oral volume repletion and sleep enhancement. However, several challenges in implementing the early mobilisation protocol have been reported such as shortage of volunteers and staff limitations[24,

25]. Small service improvement initiatives in the US and Australia using volunteers to encourage older inpatient to be more active have been reported[26-28], but poorly evaluated.

The SoMoVe study has demonstrated the feasibility of training volunteers to mobilise older people and identified barriers and facilitators to the implementation process. Four factors which were important to volunteers were identified: convenient timing, perceived benefit, positive experience, and training and competency. Future implementation studies should address these factors accordingly to promote volunteer engagement and retention. A large proportion of volunteers in this study were students (50%) aspiring to a career in healthcare. Students are motivated to volunteer to gain experience working in healthcare[29]. However, students are also less likely to volunteer long term due to their educational commitments and progression and thus there is often a higher turnover of volunteers. This should be considered when developing plans for volunteer training as a higher number of training sessions may be required in the case of a high number of student volunteers. Barriers identified include lack of staff awareness of the intervention and lack of appreciation from staff. Interestingly, through the interviews, staff members expressed their appreciation of the volunteers. However, in practice, the appreciation may not be conveyed to the volunteers, thus the perceived lack of appreciation from the volunteers. Positive experiences are important motivating factors for volunteers.

Participants in the intervention phase had a slightly shorter length of stay (15 days) compared to baseline participants (15.5 days). While no definite conclusions can be drawn from this study, previous studies have shown that an increase in physical activity levels in hospital is associated with a reduction in length of stay. De Morton et al conducted a pooled analysis of seven randomised controlled trials and 2 controlled clinical trials to explore the impact of exercise on older inpatients and found that a multidisciplinary intervention delivered by paid staff which included exercise was associated with a small reduction in acute hospital length of stay (-1.08 days, 95% CI -1.93 to -0.22 days)[11]. A study by McCullagh et al in 2016, explored the associations of average daily step count in hospital with physical performance and length of stay among older inpatients and found that a 50% increase in step count was associated with a 6% shorter length of stay[6]. The trend towards reduction in length of stay among participants in the intervention phase is consistent with findings from published literature. A future controlled trial that is adequately powered is needed to validate this finding.

Strengths of the study include the use of a well-established theoretical framework, the NPT, which aims to understand and explain the social processes through which new or modified practice of thinking, enacting, and organising work are operationalised in the healthcare setting. Input from PPI,

therapists and voluntary services were obtained at each stage of this study. The use of mixed methods approach ensured that the intervention outcomes were measurable quantitatively while the qualitative enquiry helped in the understanding of the processes of delivering the intervention and in the identification of factors which can help determine a successful implementation.

This study has several limitations. As patients were required to provide valid consent, patients with severe cognitive impairment were excluded, thus participants may not represent all older people on acute medical wards. Intervention fidelity was monitored based on volunteers' documentation. Documentation accuracy is a limitation of this methodology. Future studies should take into consideration appropriate assessment and evaluation of intervention fidelity. The pre-post study design may have introduced confounding factors when comparing data, although both groups' main characteristics were similar. Seasonal variations in healthcare use across the year with increased admissions to hospital in winter may influence some of the outcome measures including length of stay and hospital readmission rates. The intervention phase took place over three winter months whereas the baseline phase only included one winter month. Nonetheless, the length of stay and readmission rates were lower in the intervention phase.

Conclusions

This study has shown that it was feasible to deliver a volunteer-led mobility intervention including the recruitment, training and retention of volunteers. The intervention was safe and acceptable to healthcare professionals and patients. From this small feasibility study, encouraging trends in daily step count, length of stay and 30-day hospital readmission were noted. Future controlled trials are needed to explore the impact of volunteer-led physical activity intervention on patient outcomes and its cost-effectiveness in different healthcare settings.

Table 1 Patient participant characteristics and effectiveness of intervention

Characteristics	Baseline phase (n =50)	Intervention phase (n = 50)
Age ^a (years)	87.2 ± 4.6	86.2 ± 5.1
Men	87.1 ± 4.8	85.5 ± 4.6
Women	87.3 ± 4.5	86.9 ± 5.9
Barthel Index ^b (IQR)	77 (54-90)	80 (58-92)
MMSE ^b (IQR)	25.5 (22-27)	26 (22-28)
Geriatric Depression Scale ^b (IQR)	4 (3-6)	4 (3-8)
Charlson Comorbidity Index ^b (IQR)	7 (6-9)	8 (7-9)
BMI		
<18.5	3	3
18.6 – 25	27	25
>25	20	22
Number of medications		
0-5	14 (36%)	16 (32%)
6-10	22(44%)	21 (42%)
>10	14 (28%)	13 (26%)
Frail scale		
Not frail	8 (17%)	0
Pre-frail	20 (44%)	20 (41%)
Frail	18 (39%)	29 (59%)
Gait speed ^a (m/s)	0.6 (0.4-0.7)	0.5 (0.3-0.7)
Grip strength ^a (kg)		
Men	23.5 ± 7.2	22.4 ± 7.7
Women	13.8 ± 3.9	13.9 ± 6.9
Outcome measures	Baseline phase	Intervention phase
Daily step count ^b (steps)	636 (298-1468) ^c	912 (295-1824) ^d
Length of hospital stay (days)	15.5 (8 – 22.5)	15 (7 – 28)
Readmission in 1 month ^b (days)	15 (30%)	9 (18%)

N = number of participants; a: mean; b: median; ±: standard deviation; IQR: interquartile range; MMSE: Mini mental state examination; BMI: basal metabolic index; %: percentage; m/s: metre per second; kg: kilogram; c: n = 42; d: n = 44

Figure 1 Participant recruitment flow diagram

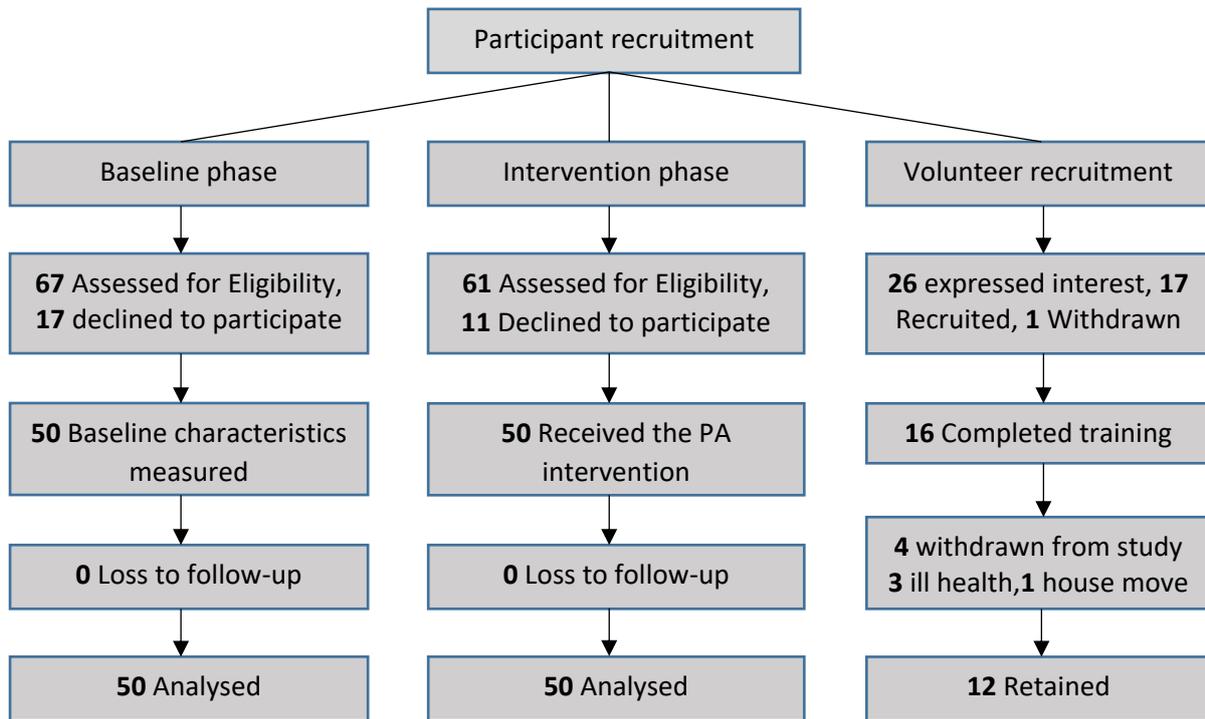
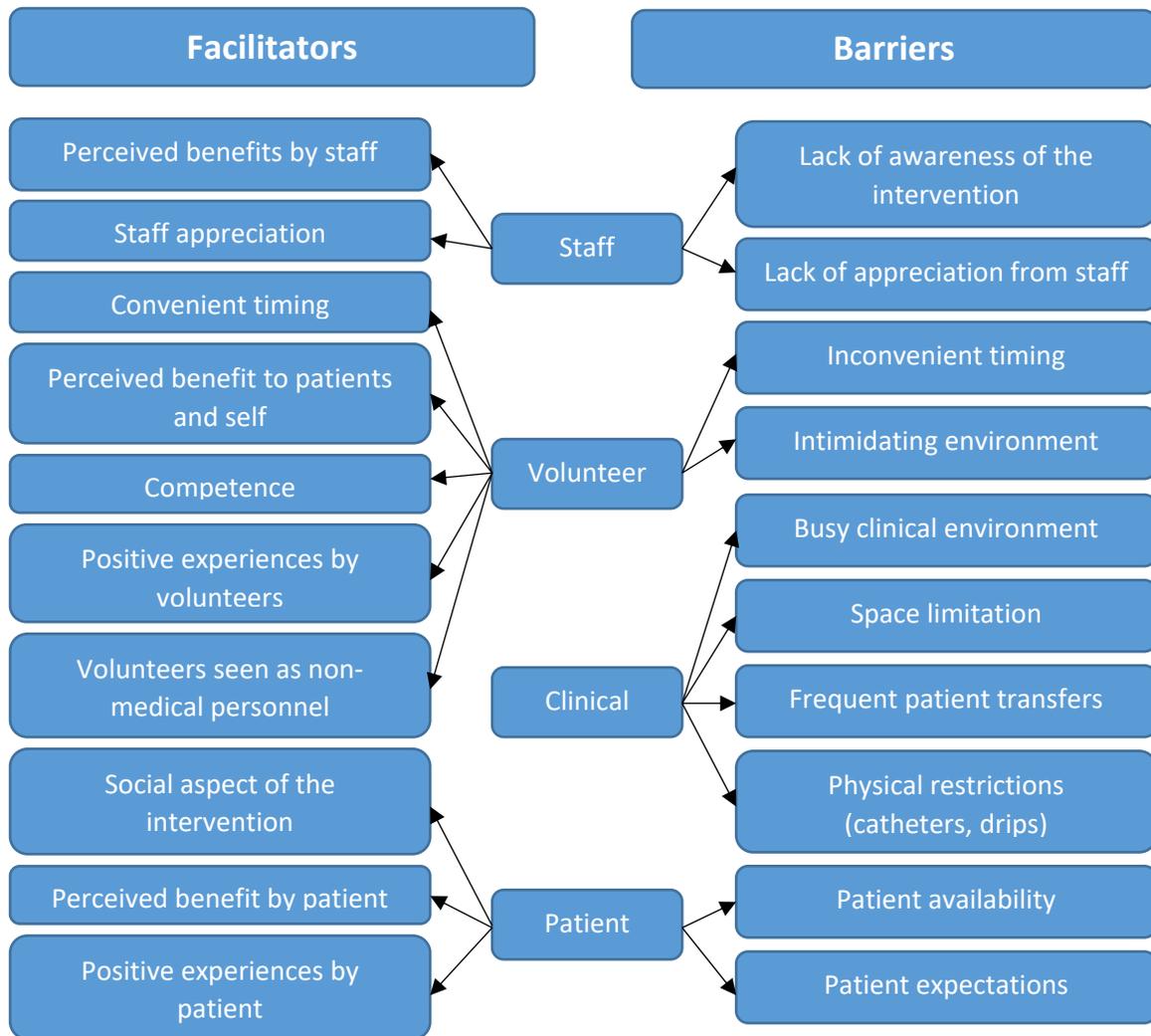


Figure 2 Facilitators and barriers to the intervention



References

1. Lafont C, Gérard S, Voisin T, Pahor M, Vellas B. Reducing "iatrogenic disability" in the hospitalized frail elderly. *The journal of nutrition, health & aging*. 2011;15(8):645-60.
2. Covinsky KE, Palmer RM, Fortinsky RH, Counsell SR, Stewart AL, Kresevic D, et al. Loss of independence in activities of daily living in older adults hospitalized with medical illnesses: Increased vulnerability with age. *Journal of the American Geriatrics Society*. 2003;51:451-8.
3. Hoogerduijn JG, Schuurmans MJ, Duijnste MSH, De Rooij SE, Grypdonck MFH. A systematic review of predictors and screening instruments to identify older hospitalized patients at risk for functional decline. *Journal of Clinical Nursing*. 2007;16:46-57.
4. Zisberg A, Shadmi E, Sinoff G, Gur-Yaish N, Srulovici E, Admi H. Low mobility during hospitalization and functional decline in older adults. *Journal of the American Geriatrics Society*. 2011;59(2):266-73.
5. Brown CJ, Friedkin RJ, Inouye SK. Prevalence and outcomes of low mobility in hospitalized older patients. *Journal of the American Geriatrics Society*. 2004;52(8):1263-70.
6. McCullagh R, Dillon C, Dahly D, Horgan NF, Timmons S. Walking in hospital is associated with a shorter length of stay in older medical inpatients. *Physiol Meas*. 2016;37(10):1872-84.
7. Fisher S, Goodwin J, Protas EJ, Kuo Y-F, Graham JE, Ottenbacher KJ, et al. Ambulatory Activity of Older Adults Hospitalized with Acute Medical Illness. *Journal of the American Geriatrics Society*. 2011;59(1):91-5.
8. Lim SER, Dodds R, Bacon D, Sayer AA, Roberts HC. Physical activity among hospitalised older people: insights from upper and lower limb accelerometry. *Aging Clin Exp Res*. 2018;30(11):1363-9.
9. Pedersen MM, Bodilsen AC, Petersen J, Beyer N, Andersen O, Lawson-Smith L, et al. Twenty-four-hour mobility during acute hospitalization in older medical patients. *Journals of Gerontology Series A-Biological Sciences & Medical Sciences*. 2012;68(3):331-7.
10. Mudge AM, McRae P, McHugh K, Griffin L, Hitchen A, Walker J, et al. Poor mobility in hospitalized adults of all ages. *Journal of Hospital Medicine*. 2016;11(4):289-91.
11. De Morton Na, Keating JL, Jeffs K. Exercise for acutely hospitalised older medical patients. *Cochrane Database of Systematic Reviews*. 2007(1):CD005955.
12. Liu B, Moore JE, Almaawiy U, Chan W-H, Khan S, Ewusie J, et al. Outcomes of Mobilisation of Vulnerable Elders in Ontario (MOVE ON): a multisite interrupted time series evaluation of an implementation intervention to increase patient mobilisation. *Age and Ageing*. 2018;47(1):112-119.
13. Martinez-Velilla N, Casas-Herrero A, Zambom-Ferraresi F, Lopez Saez de Asteasu M, Lucia A, Galbete A, et al. Effect of Exercise Intervention on Functional Decline in Very Elderly Patients During Acute Hospitalization: A Randomized Clinical Trial. *JAMA Intern Med*. 2018 Nov 12 [Published online ahead of print].
14. Kosse NM, Dutmer AL, Dasenbrock L, Bauer JM, Lamoth CJC. Effectiveness and feasibility of early physical rehabilitation programs for geriatric hospitalized patients: a systematic review. *BMC Geriatrics*. 2013;13(1):107.
15. Smart DA, Dermody G, Coronado ME, Wilson M. Mobility Programs for the Hospitalized Older Adult: A Scoping Review. *Gerontology & geriatric medicine*. 2018;4:2333721418808146.
16. Royal College of Nursing. Safe staffing for older people's wards. 2012 [21/03/2019]; Available from: <https://www.rcn.org.uk/-/media/royal-college-of-nursing/documents/publications/2012/march/pub-004234.pdf>.
17. Roberts HC, De Wet S, Porter K, Rood G, Diaper N, Robison J, et al. The feasibility and acceptability of training volunteer mealtime assistants to help older acute hospital inpatients: the Southampton Mealtime Assistance Study. *Journal of clinical nursing*. 2014;23(21-22):3240-9.
18. Baczynska AM, Lim SE, Sayer AA, Roberts HC. The use of volunteers to help older medical patients mobilise in hospital: a systematic review. *J Clin Nurs*. 2016;25(21-22):3102-12.
19. Inouye SK, Bogardus ST, Jr., Baker DI, Leo-Summers L, Cooney LM, Jr. The Hospital Elder Life Program: a model of care to prevent cognitive and functional decline in older hospitalized patients. Hospital Elder Life Program. *J Am Geriatr Soc*. 2000;48(12):1697-706.

20. Inouye SK, Baker DI, Fugal P, Bradley EH. Dissemination of the Hospital Elder Life Program: Implementation, adaptation, and successes. *Journal of the American Geriatrics Society*. 2006;54:1492-9.
21. May C. Towards a general theory of implementation. *Implementation Science*. 2013;8(1):18.
22. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3:77-101.
23. Baczynska A, Blogg H, Haskins M, Sayer A, Roberts HC. Acceptability of use of volunteers for fundamental care of older people. *Age and Ageing*. 2015;44(February):i1-i9.
24. Rubin FH, Neal K, Fenlon K, Hassan S, Inouye SK. Sustainability and scalability of the hospital elder life program at a community hospital. *Journal of the American Geriatrics Society*. 2011;59(2):359-65.
25. Zaubler TS, Murphy K, Rizzuto L, Santos R, Skotzko C, Giordano J, et al. Quality Improvement and Cost Savings with Multicomponent Delirium Interventions: Replication of the Hospital Elder Life Program in a Community Hospital. *Psychosomatics*. 2013 2013/05/01/;54(3):219-26.
26. Boyd D, Lipowich D. Footprints Walking Program. 2011 [31/03/2019]; Available from: <http://nicheconference2012.s3.amazonaws.com/uploads/File/2012%20Conf%20Poster%20-%20Northwest%20Community.pdf>.
27. Tawbe R. Aged Care Therapeutic Interventions by Volunteers. 2011 [31/03/2019]; Available from: <http://aci.health.nsw.gov.au/ie/projects/active/active-program.pdf>.
28. Eaniello M, Waszynski C, Kelly C. Mobility is Medicine. 2011 [31/03/2019]; Available from: <http://nicheconference2012.s3.amazonaws.com/uploads/File/2012%20Conf%20table%20poster%20-%20Hartford%20Hospital.pdf>.
29. Smith K, Holmes K, Haski-Leventhal D, Cnaan R, Handy F, Brudney J. Motivations and Benefits of Student Volunteering: Comparing Regular, Occasional, and Non-Volunteers in Five Countries. *Canadian Journal of Nonprofit and Social Economy Research*. 2010;1(1):65-81.