

STARS Education and Research Alliance

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THE UNIVERSITY
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Health



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STARS Critically Appraised Topics (CAT) Group: Falls prevention in inpatient subacute rehabilitation

Specific Question:

What are the most effective interventions for reducing falls in adults aged 18 years and over, in the inpatient subacute rehabilitation hospital setting?

Clinical bottom line

Multifactorial falls prevention intervention (based on an assessment of an individual's risk of falling and including targeted patient education for individuals who are cognitively well) may reduce the rate of falls. The benefits of single interventions such as additional physiotherapy, bed alarms, chair sensors, low-low beds, medication reviews, vitamin D supplementation and social interventions were unclear.

Implications for clinical practice

A review of STARS clinical practice is suggested to better understand what occurs at after the individual falls assessment has been performed: 1) how is the care plan derived, actioned and adhered to, 2) how is reassessment incorporated, and 3) is targeted education delivered?

Why is this important?

The STARS Safety and Quality team have identified that falls in inpatient areas of the hospital are taking place. We want to identify interventions with the highest evidence for implementing into clinical practice to prevent falls in the subacute hospital setting for inpatients in general rehabilitation and geriatric evaluation and management wards (GEM).

Inclusion Criteria

Interventions for falls prevention

Inpatient hospital settings

Rehabilitation setting (including geriatric and general rehabilitation wards)

Adults

English language

Relevant study types (Intervention studies; meta-analysis, systematic reviews, RCTs)

Search

2016–2021

Type of Study

Intervention study

	Description	Search terms
Population and Setting	inpatients & rehabilitation hospital setting, adults over 18 years	Inpatients, hospitalised, hospitalisation Rehabilitation OR geriatric

Intervention or Exposure (ie what is being tested)	Interventions for falls prevention, either single, or multifactorial	Falls
Comparison, if any	No falls prevention interventions, other falls prevention interventions	
Outcomes of interest	Reducing falls	Prevention, safety
Types of studies	Meta-analysis, systematic reviews, RCTs	

Databases Searched

PubMed, CINAHL Complete, Embase, Cochrane Library

Date of search

6 September 2021

Search Strategies (including subject headings)

PubMed 705 results

("Accidental Falls"[Mesh] OR fall*[ti]) AND ("Hospitals"[Mesh] OR "Hospitalization"[Mesh] OR "Inpatients"[Mesh] OR "hospitals"[ti] OR "hospital"[ti] OR "hospitalization"[ti] OR "hospitalisation"[ti] OR "hospitalizations"[ti] OR "hospitalisations"[ti] OR "hospitalised"[ti] OR "hospitalized"[ti] OR "inpatients"[ti] OR "inpatient"[ti]) AND ("Accident Prevention"[Mesh] OR "prevention"[tiab] OR "preventions"[tiab] OR "prevent"[tiab] OR "prevents"[tiab] OR "reducing"[tiab] OR "reduce"[tiab] OR "reduces"[tiab] OR "reduction"[tiab] OR "reductions"[tiab]) AND 2016:2021[dp]

CINAHL Complete (EBSCOhost) 744 results

(MH "Accidental Falls" OR TI fall*) AND (MH "Hospitals+" OR MH "Hospitalization+" OR MH "Inpatients" OR TI("hospitals" OR "hospital" OR "hospitalization" OR "hospitalisation" OR "hospitalizations" OR "hospitalisations" OR "hospitalised" OR "hospitalized" OR "inpatients" OR "inpatient")) AND (MH "Safety+" OR TI("prevention" OR "preventions" OR "prevent" OR "prevents" OR "reducing" OR "reduce" OR "reduces" OR "reduction" OR "reductions") OR AB("prevention" OR "preventions" OR "prevent" OR "prevents" OR "reducing" OR "reduce" OR "reduces" OR "reduction" OR "reductions")) AND PY 2016-2021

Embase (Elsevier) 638 results

('falling'/mj OR fall*:ti) AND ('hospital'/exp OR 'hospitalization'/exp OR 'hospital patient'/exp OR "hospitals":ti OR "hospital":ti OR "hospitalization":ti OR "hospitalisation":ti OR "hospitalizations":ti OR "hospitalisations":ti OR "hospitalised":ti OR "hospitalized":ti OR "inpatients":ti OR "inpatient":ti) AND ('accident prevention'/exp OR 'patient safety'/exp OR "prevention":ti,ab OR "preventions":ti,ab OR "prevent":ti,ab OR "prevents":ti,ab OR "reducing":ti,ab OR "reduce":ti,ab OR "reduces":ti,ab OR "reduction":ti,ab OR "reductions":ti,ab) AND [2016-2021]/py AND ([article]/lim OR [article in press]/lim OR [review]/lim)

Cochrane Library (Wiley) 129 results (including 3 Cochrane Reviews, 126 Trials)

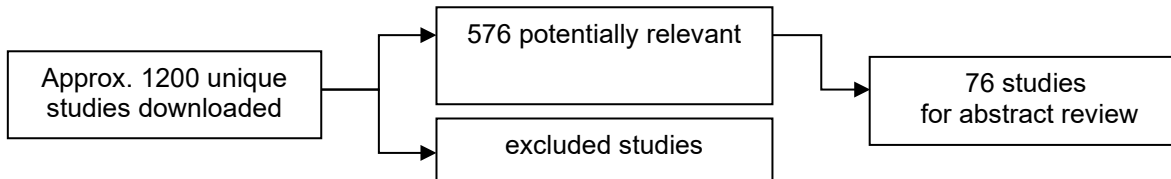
ID	Search	Hits
#1	MeSH descriptor: [Accidental Falls] explode all trees	1590
#2	(fall*):ti	3711
#3	#1 OR #2	4407
#4	MeSH descriptor: [Hospitals] explode all trees	3797
#5	MeSH descriptor: [Hospitalization] explode all trees	14705
#6	MeSH descriptor: [Inpatients] explode all trees	1017
#7	("hospitals" OR "hospital" OR "hospitalization" OR "hospitalisation" OR "hospitalizations" OR "hospitalisations" OR "hospitalised" OR "hospitalized" OR "inpatients" OR "inpatient"):ti	19490
#8	#4 OR #5 OR #6 OR #7	33769
#9	MeSH descriptor: [Accident Prevention] explode all trees	4157
#10	("prevention" OR "preventions" OR "prevent" OR "prevents" OR "reducing" OR "reduce" OR "reduces" OR "reduction" OR "reductions"):ti,ab,kw	494752

#11 #9 OR #10 496920
 #12 #3 AND #8 AND #11 with Cochrane Library publication date Between Jan 2016 and Dec 2021 129

Search process

Exported results from databases to EndNote, removed duplicates, also removed non-English articles, trial registrations, conference abstracts, editorials, commentaries, and results not relevant to inclusion criteria. Copied annotated bibliography for search results into word for screening title and abstracts, and highlighted results with relevant study types.

Results



76 studies (systematic reviews, meta-analysis and RCTs relevant to the questions were reviewed for title and abstract by 5 members of the CAT group (a multidisciplinary group comprising one physiotherapist, one occupational therapist, one nurse and two researchers/ physiotherapists). The best evidence came from a recent Cochrane review (Cameron et al. 2018 which included 24 trials and 97,790 patients).

First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Cameron et al. (2018) Cochrane Database of systematic reviews	Older people in care facilities or in hospitals (divided into acute, subacute care)	Falls prevention interventions (exercise, environment and assistive technology such as bed alarm, chair sensors and low-low beds, social intervention, medication review, vitamin D supplements)	For the hospital setting: 24 trials, n= 97,790, mean age 78 years, 52% women <i>Uncertain of the effect of the following single interventions on the rate of falls or the risk of falls:</i> Additional physiotherapy (supervised exercises on rehab wards (subacute setting) Bed alarms and chair sensors Social environment Medication reviews Medication – vitamin D supplementation Knowledge interventions <i>The following interventions may reduce the rate of falls (more likely in subacute settings) but there is uncertainty about the effect on the risk of falling)</i> Multifactorial Interventions	Low quality evidence

Implications for Practice/research

Current clinical practice at STARS: nursing staff complete a falls risk assessment for each individual patient on the day of admission to inpatient rehabilitation. After the falls risk assessment, a care plan is created for each patient which can include multiple interventions to reduce the risk of falls. Targeted patient education is not systematically included in these interventions.

What would you tweet? (140 characters)

An individual falls risk assessment to determine a person's risk of falls AND delivery of tailored multifactorial interventions including targeted education is currently best evidence to prevent older people from falling in the subacute inpatient rehabilitation setting.

CAT Group Members

Ella van Raders, Jasmine Kellaway, Nadine Foster, Daniel Carlyle, Aparna Arjunan, Raj Singh, Marcia Lear, Natalie Barker, Glen Anderson, Kellie Lacey, Cindy James, Ingrid Rosbergen

References

Cameron, I. D., et al. (2018). "Interventions for preventing falls in older people in care facilities and hospitals." Cochrane Database Syst Rev 9(9): Cd005465.