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## TITLE PAGE

**Title:** Readmissions of ELder patIEnts presenting to hospital for a Fall (RELIEF): a systematic review.

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**Running title:** Readmission prevention in older fallers: a review

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**Brief summary:** Our systematic review of interventions to prevent readmissions of older adults presenting with a fall included six recent studies, with differences in the professionals involved, design, and location; three had positive results.

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1 **ABSTRACT**

2 Objectives:

3 Falls are an important issue in older adults as they are frequent, deleterious and  
4 often lead to repeated consultations at the Emergency Department (ED) and  
5 unplanned hospitalizations. Our principal objective was to provide an inventory of  
6 interventions designed to prevent unplanned readmissions or ED visits of older  
7 patients presenting to hospital with a fall.

8

9 Design:

10 Systematic review performed on February 11<sup>th</sup> 2019, in MEDLINE via PubMed,  
11 EMBASE, Cochrane Central Register of Controlled Trials, and Web of Science,  
12 without date or language restriction. We manually updated this search in August 1<sup>st</sup>  
13 2019. Study selection, data extraction and risk of bias assessment were conducted  
14 independently by two reviewers.

15

16 Setting and Participants:

17 We included studies reporting interventions to prevent unplanned readmissions or  
18 ED visits of older patients (aged 65 or over) presenting to hospital because of a fall.

19

20 Results:

21 We identified 475 unique citations after removing duplicates and included six studies  
22 (two observational and four interventional studies). The studies were published  
23 between 2012 and 2019; they evaluated heterogeneous interventions that were  
24 frequently multifaceted and multidisciplinary. The interventions were shown effective

25 in reducing readmissions or ED revisits compared to control groups in three studies  
26 (relative risk reductions between 30 and 65%), all of which were multifaceted and 2/3  
27 multidisciplinary.

28

29 Conclusions and implications:

30 With six articles showing inconsistent results, our study highlights the need to  
31 adequately design and evaluate interventions to reduce the burden of hospital  
32 readmissions among older fallers. Retrieved studies are recent, which underlines  
33 that hospital readmissions are a current concern for researchers and public health  
34 authorities. [PROSPERO registration number: CRD42019131965].

35 **INTRODUCTION**

36 Falls are an important issue in older adults as they are frequent and deleterious:  
37 30% of people aged over 65 experience a fall every year.<sup>1</sup> Moreover, falls are a risk  
38 factor for hospitalization and death. In the United States, falls account for 13.5% of  
39 Emergency Department (ED) visits in patients aged 65 and over, and the percentage  
40 of ED visits that result in hospital admission increases with age.<sup>2</sup>

41 These hospital stays are unplanned, frequent and constitute a heavy burden at both  
42 the individual and collective levels.<sup>3,4</sup> Moreover, hospitalizations increase the  
43 occurrence of adverse events in the following weeks and months after discharge,  
44 including preventable readmissions. For instance, the readmission rate was 40% in  
45 older patients in a recent French study.<sup>5</sup> Risk factors for early unplanned preventable  
46 readmissions include severe disability and markers of frailty, such as poor overall  
47 condition, pressure sores and prior hospitalizations.<sup>6</sup> Although previous research  
48 identified and categorized interventions to reduce 30-day readmission,<sup>7</sup> special  
49 attention should be paid to older patients admitted to hospital with a fall and  
50 interventions should be implemented to put an end to the vicious circle of falls,  
51 hospital admissions and readmissions.

52 Our principal objective was to provide an inventory of all interventions or processes  
53 designed to prevent unplanned readmissions or ED visits of older patients presenting  
54 to hospital with a fall. Our secondary objectives were to assess the effect of these  
55 interventions on the recurrence of falls, and to detect any possible harm or  
56 unintended effect of these interventions.

## 57 **METHODS**

### 58 **Design**

59 We performed a systematic review following the recommendations of the Cochrane  
60 Handbook<sup>7</sup> and reported according to the Preferred Reporting Items for Systematic  
61 Reviews and Meta-analyses (PRISMA) guidelines<sup>8</sup> (Appendix 1). The study protocol  
62 was registered in the PROSPERO database (CRD42019131965).

63

### 64 **Eligibility criteria**

65 We included original studies reporting any intervention or process to prevent  
66 unplanned readmissions in older patients (defined as people aged 65 years or over),  
67 admitted to hospital or visiting ED because of a fall. The prevention of unplanned  
68 readmission had to be either the primary objective or a secondary objective. We  
69 considered both interventional and observational studies.

70 Studies on older patients with a specific condition (such as stroke, depression, or hip  
71 fracture) were excluded.

72

### 73 **Data sources**

74 We searched MEDLINE via PubMed, EMBASE, Cochrane Central Register of  
75 Controlled Trials, and Web of Science. This electronic search was run on February  
76 11th, 2019, without date or language restriction (investigators are fluent in English,  
77 French and Spanish, any article in other language would be sent to a professional  
78 translator). We then hand-searched additional eligible studies in reference lists and  
79 citing articles. We manually updated this search on August 1st for the period from  
80 February 2019 to August 2019.

81

## 82 **Search strategy**

83 The search algorithm combined terms related to “older adults”, “falls” and “hospital  
84 readmission”, and was adapted to each database, using specific thesaurus (MeSH  
85 terms for MEDLINE, Emtree terms for EMBASE) as well as free text words  
86 (Supplemental Table 1).

87

## 88 **Study selection**

89 After removing duplicates, two investigators (CR, PH) independently screened titles  
90 and abstracts and then full texts whenever necessary for final eligibility.

91 Disagreements were resolved by discussion with the help of a third investigator (CF).

92

## 93 **Data extraction**

94 Data extraction was performed by CR using a standardized form and was  
95 independently checked by PH.

96 In cases of missing data, the authors were contacted by email to recover the  
97 variables of interest, with a reminder after one week. Data was considered missing  
98 when authors had not answered within two additional weeks.

99

100 We collected the following data items for each included study:

101 1) General information: first author, year of publication, journal, country, study  
102 design (observational or interventional, prospective or retrospective, single-center  
103 or multicenter), study duration, period of recruitment, inclusion and exclusion  
104 criteria, and sample size.



- 105 2) Baseline population characteristics: number of patients in each group, mean age,  
106 and sex ratio.
- 107 3) Description of the intervention including whether it was mono- or multifaceted,  
108 multidisciplinary or not. An intervention was considered multifaceted when acting  
109 on different factors, it was considered multidisciplinary when involving different  
110 healthcare professionals.
- 111 4) Primary and secondary outcomes of included studies, sources (e.g. databases or  
112 ad hoc studies) and follow-up schedule.
- 113 5) The results for our primary outcomes: the number of patients who experienced at  
114 least one readmission or ED visit; the results for our secondary outcomes: the  
115 recurrence of falls, and any harm or unintended effect of interventions.

116

### 117 **Risk of bias assessment**

118 The risk of bias was evaluated for each included study, using the Cochrane Risk of  
119 Bias Tool. Selection, performance, detection, attrition and reporting biases were  
120 evaluated as recommended. We also evaluated the risk of contamination bias  
121 (defined as mixing the experimental and control interventions), as we expected that  
122 an effective blinding could be hardly feasible in studies dealing with this type of  
123 intervention.

124 Because of the low number of included studies, we were not able to assess the risk  
125 of publication bias.

126

### 127 **Quality of reporting**

128 The quality of reporting was assessed for each included study, according to the  
129 CONSORT statement<sup>9</sup> for interventional studies and the STROBE statement<sup>10</sup> for

130 observational studies. Each item was coded as completely reported, incompletely  
131 reported or not reported.

132 The description of each intervention reported in included studies was assessed  
133 according to the TIDIER checklist and guidelines.<sup>11</sup>

134

135 These assessments (risk of bias and quality of reporting) were conducted  
136 independently by CR and PH with the help of CF in cases of disagreement.

137

### 138 **Statistical analysis**

139 Agreement between the two investigators for study eligibility was assessed by the  
140 Cohen Kappa coefficient, using R version 3.5.1 (The R Foundation for Statistical  
141 Computing) (Appendix 2). A Kappa coefficient equal to 0.60-0.74 was considered  
142 good, and equal or greater than 0.75 very good.<sup>12</sup>

143 When studies assessed the rate of readmission without any comparison between  
144 groups, a Chi-squared test was performed on raw data after contacting authors.

145 **RESULTS**

146 **Study selection and inter-reviewer agreement**

147 The literature search identified 757 records, resulting in 475 unique citations after  
148 removing duplicates. After examination of titles and abstracts, then full-text records,  
149 and additional hand search, six studies were included, as shown in Figure 1.<sup>14-19</sup>  
150 Agreement for full-text eligibility between the two investigators was very good  
151 (Cohen Kappa coefficient 0.75 [95% CI, 0.45-1]).

152

153 **General characteristics of included studies**

154 The main characteristics of included studies are shown in Supplemental Table 2.  
155 Among the six included studies, two<sup>15,17</sup> were retrospective observational studies,  
156 four<sup>14,15,17,19</sup> were interventional studies, among which two<sup>14,16</sup> were quasi-  
157 randomized, and one<sup>13</sup> was a matched pair study. Four studies<sup>14-16,19</sup> were single-  
158 center studies and two<sup>14,18</sup> were multicenter.  
159 Included studies were recent; they were all published between 2012 and 2019.

160

161 Regarding the populations, inclusion criteria were quite homogeneous across  
162 included studies. Patients enrolled were aged 65 years and over in all included  
163 studies, except for Clementz *et al.* (75 years and over). In five studies,<sup>14-16,18,19</sup>  
164 patients went to ED or to hospital with a fall. In Harper *et al.* (2017), the patients who  
165 went to ED were included regardless of their reason for admission, they were further  
166 divided into patients presenting with a fall or not for analysis.<sup>16</sup> In Clementz *et al.*,  
167 inclusion criteria were restricted to older patients presenting with injuries related to a  
168 fall and with at least two chronic diseases and taking two or more medications.<sup>14</sup>

169 Exclusion criteria varied between studies. Patients admitted for lower limb fractures  
170 were excluded in two studies<sup>13,17</sup>; those living in long-term care facilities were  
171 excluded in two<sup>16,17</sup>. One study<sup>19</sup> excluded patients with acute confusional state,  
172 cognitive impairment, and whose gait, standing balance, mobility or strength were  
173 not impaired. Another study<sup>14</sup> excluded patients who required immediate  
174 resuscitation or palliative care. Exclusion criteria were not reported in Harper *et al.*  
175 (2013).<sup>15</sup>

176

### 177 **Quality of reporting and risk of bias**

178 Regarding the quality of reporting (Supplemental Figures 1 and 2), in observational  
179 studies,<sup>15,17</sup> the STROBE items were generally well reported, except the items  
180 concerning reasons for non-participation, flow diagram, and the number of  
181 participants with missing data. In interventional studies,<sup>14,15,17,19</sup> the CONSORT items  
182 were generally well reported, except the items concerning changes of outcomes after  
183 the beginning of the trial, and the item concerning harms or unintended effects.

184 Risk of bias assessment, as described in Figure 2, showed that included studies  
185 presented the same pattern of bias, except for Harper *et al.* in 2017.<sup>17</sup> There was a  
186 low risk of detection bias and reporting bias; an unclear risk of attrition bias; and a  
187 high risk of performance bias, and selection bias due to inadequate random  
188 sequence generation and allocation concealment. Risk of contamination was low.

189

### 190 **Description of interventions evaluated**

191 Interventions reported were heterogeneous regarding the healthcare professionals  
192 involved and the type of intervention. Clementz *et al.* only involved pharmacists,<sup>14</sup>  
193 but all other included studies reported multidisciplinary interventions, as reported in

194 Table 1. Among these multidisciplinary interventions,<sup>14,16–19</sup> between two and six  
195 health professionals were involved; each study implicated different professionals, but  
196 physiotherapists and occupational therapists were systematically involved.

197 All interventions were multi-faceted, and targeted patients; Bond et *al.* also targeted  
198 caregivers.<sup>13</sup>

199 The following three interventions took place in hospital only (ED or specialized  
200 wards):

- 201 - Clinical pharmacy services in ED (early in-hospital medication reconciliation,  
202 medication review), and transmission of medical records to the patients'  
203 physicians to report prescription modifications.<sup>14</sup>
- 204 - A brief scripted patient education in ED, tailored to the future risk of falling, in  
205 which the key message was fall prevention strategy.<sup>16</sup>
- 206 - An intensive targeted rehabilitation therapy, in a Department of Rehabilitation  
207 and Geriatrics, with exercise in tailored individual sessions and group  
208 sessions.<sup>19</sup>

209 The last three interventions were shared between hospital and community services.  
210 They consisted of baseline assessment and referrals to home care and other  
211 community-based services:

- 212 - By an ED Care Coordinator (EDCC) identifying patients' healthcare needs  
213 outside the ED<sup>13</sup>
- 214 - By a Care Coordination Team (CCT) also managing fall risk stratification,  
215 patient education, functional retraining and supply of equipment<sup>15</sup>
- 216 - By a multi-professional team in Geriatric Assessment Units (GAUs) in  
217 collaboration with families<sup>17</sup>

218

219 The quality of description of the interventions was generally poor with a median  
220 percentage of TIDIER items completely reported of 33.3% (min 25 - max 83.3); the  
221 median of incompletely reported items was 25% (min 0 - max 41.7); it was 29.1% for  
222 items not reported at all (min 16.7 - max 50). The less reported items referred to  
223 modifications during the course of the study and if fidelity was assessed.

224

### 225 **Readmissions of older patients presenting to hospital with a fall**

226 Among included studies, only three studies showed a significant reduction of hospital  
227 readmissions or ED revisits, as reported in Table 2:

- 228 - In Clementz *et al.*, the number of patients readmitted 3 months after discharge  
229 was decreased by 60% in the intervention group compared to control group  
230 (p=0.006); after 72 hours and 1 month, readmissions were respectively  
231 decreased by 30% (p=0.049) and 55% (p=0.022) compared to control group;<sup>14</sup>
- 232 - In Harper *et al.* in 2017, the rate of patients revisiting ED within 6-months  
233 post-discharge in the intervention group was reduced by half compared to  
234 control group (p=0.033);<sup>16</sup>
- 235 - In Kergoat *et al.*, the number of patients readmitted to hospital was  
236 significantly decreased by 65% when they had an informational continuity  
237 score  $\geq 50\%$ , compared to those with score  $< 50\%$  (p=0.023) (i.e. patients for  
238 whom the intervention was reported to have been performed more than half  
239 versus patients for whom the intervention was reported to have be performed  
240 less than half).<sup>17</sup>

241 The other interventions did not significantly reduce readmissions to hospital or ED  
242 revisits.

243

244 **Secondary outcomes**

245 Of the six included studies, two measured the effects of interventions on falls.<sup>17,19</sup>

246 The recurrence of falls was assessed differently according to the studies: either as  
247 the number of patients experiencing at least one fall after index hospitalization or ED  
248 visit, or as the number of falls. Reported interventions did not significantly decrease  
249 the recurrence of falls (Harper *et al.* (2017) (p=0.34), Trombetti *et al.* (relative risk  
250 0.65, [0.27-1.59], p=0.35)).

251 Harms or unintended effects were not reported in any included study.

252 **DISCUSSION**

253 Our systematic review retrieved six recently published studies, reporting  
254 interventions to reduce readmissions of older patients presenting to hospital with a  
255 fall. Three studies showed significant results for the following interventions: clinical  
256 pharmacy services (medical reconciliation, medication review and conveying  
257 treatment changes to the patients' physicians),<sup>14</sup> patient education tailored to the  
258 future risk of falling,<sup>16</sup> and comprehensive multi-professional management with  
259 informational continuity.<sup>17</sup>

260

261 Interventions in older patients presenting to hospital with a fall do not always aim at  
262 reducing hospital readmissions. For instance, their primary objective can be the  
263 reduction of recurrence of falls or the improvement of gait and balance, as in two of  
264 our included studies.<sup>17,19</sup> It appears that the question of reducing readmissions in  
265 older patients is a new research subject, dealing with relatively contemporaneous  
266 concerns of health care policies worldwide; this may explain why all included studies  
267 have been very recently published. For instance, since 2012, American hospitals  
268 face financial penalties of 1% across all Diagnosis Related Groups if they exceed 30-  
269 day risk-standardized readmission rates for specific conditions/procedures<sup>20</sup> and  
270 these penalties increased to 3% in 2014. Great Britain has been another example  
271 since 2011, with the National Health Service's Policy of Nonpayment for Emergency  
272 Readmissions, which prevents reimbursement for all emergency readmissions to  
273 hospital within 30 days after the initial discharge.<sup>21</sup>

274

275 Interventions were varied across included studies. This diversity was also found in  
276 effective interventions, and may have created the opportunity to implement a model



277 of intervention tailored to each setting. Reported interventions took place in various  
278 locations (ED, specialized wards, or both hospital and community services), and  
279 were multi-faceted, as they targeted various aspects of older adults, and involved  
280 various health professionals.

281 There were other sources of heterogeneity between included studies which may  
282 affect the comparability between studies and prevent undertaking meta-analyses:  
283 clinical heterogeneity, i.e. variations in patients' characteristics (inclusion and  
284 exclusion criteria, mean age) and outcomes; and methodological heterogeneity, i.e.  
285 variations in study designs (observational versus interventional studies, single-center  
286 versus multi-center studies, and follow-up schedules), as well as the way results  
287 were reported (in numbers of patients or numbers of events per person-year).<sup>7</sup>

288

289 Despite the good overall quality of reporting of the included studies, the poor  
290 description of the interventions is an obstacle to ensuring the reproducibility of these  
291 interventions.<sup>11</sup> Our results are consistent with those of Candy *et al.* who also found  
292 a lack of details to replicate interventions.<sup>22</sup>

293 Furthermore, the degree of implementation of intervention was not described,  
294 whereas it may influence outcomes, as mentioned by Neyens *et al.* in their  
295 systematic review on interventions to prevent falls in older adults.<sup>23</sup> Moreover,  
296 Kergoat *et al.* show in their study that intervention significantly reduces readmissions  
297 only when informational continuity is well established.<sup>17</sup>

298 Another issue which impacts generalizability is that very few authors reported  
299 whether interventions were adapted to the cause of falls (i.e. drug-related or disease-  
300 related for instance). Only the intervention in Harper *et al.* (2017) was tailored to the

301 patient's future risk of falling and this intervention was among those significantly  
302 effective.<sup>16</sup>

303 Despite recommendations by reporting guidelines,<sup>9</sup> harms and unintended effects of  
304 interventions were not reported in any study. This issue is important, as for instance,  
305 Wadhera *et al.* brought to light that the American program to reduce readmissions  
306 was significantly associated with an increase in 30-day post-discharge mortality after  
307 hospitalization for heart failure and pneumonia;<sup>24</sup> future studies should systematically  
308 mention and explore these outcomes.

309

### 310 **Limitations**

311 There are two limitations related to the study selection. First, our search strategy  
312 may have missed some relevant studies. The two articles included after hand-search  
313 in reference lists and citing articles<sup>15,17</sup> were not indexed with all three keywords  
314 "older adults", "falls" and "hospital readmission". Second, the outcome "hospital  
315 readmissions or ED revisits among older patients presenting to hospital with a fall"  
316 was a primary outcome in only two included studies.<sup>14,15</sup> In the remaining five  
317 studies, either hospital readmissions / ED revisits were secondary outcomes, or  
318 older fallers were a subgroup of study population. Thus, both electronic search and  
319 hand-search may not have retrieved all studies dealing with our subject. Third, high  
320 risks of selection and performance biases in some included studies may impair our  
321 findings. Fourth, we were unable to pool the results and perform a meta-analysis due  
322 to the heterogeneity of interventions.

323 **CONCLUSIONS AND IMPLICATIONS**

324 Our systematic review of interventions designed to prevent unplanned readmissions  
325 or ED visits of older patients presenting with a fall included six studies (2012-2019),  
326 of which three had positive results. Interventions differed with regard to the  
327 healthcare professionals involved, the design, and the location. However, further  
328 research is clearly needed to identify the key parameters necessary to reduce  
329 readmissions of older patients presenting with a fall.

330 **CONFLICTS OF INTEREST**

331 The authors declare no conflicts of interest.

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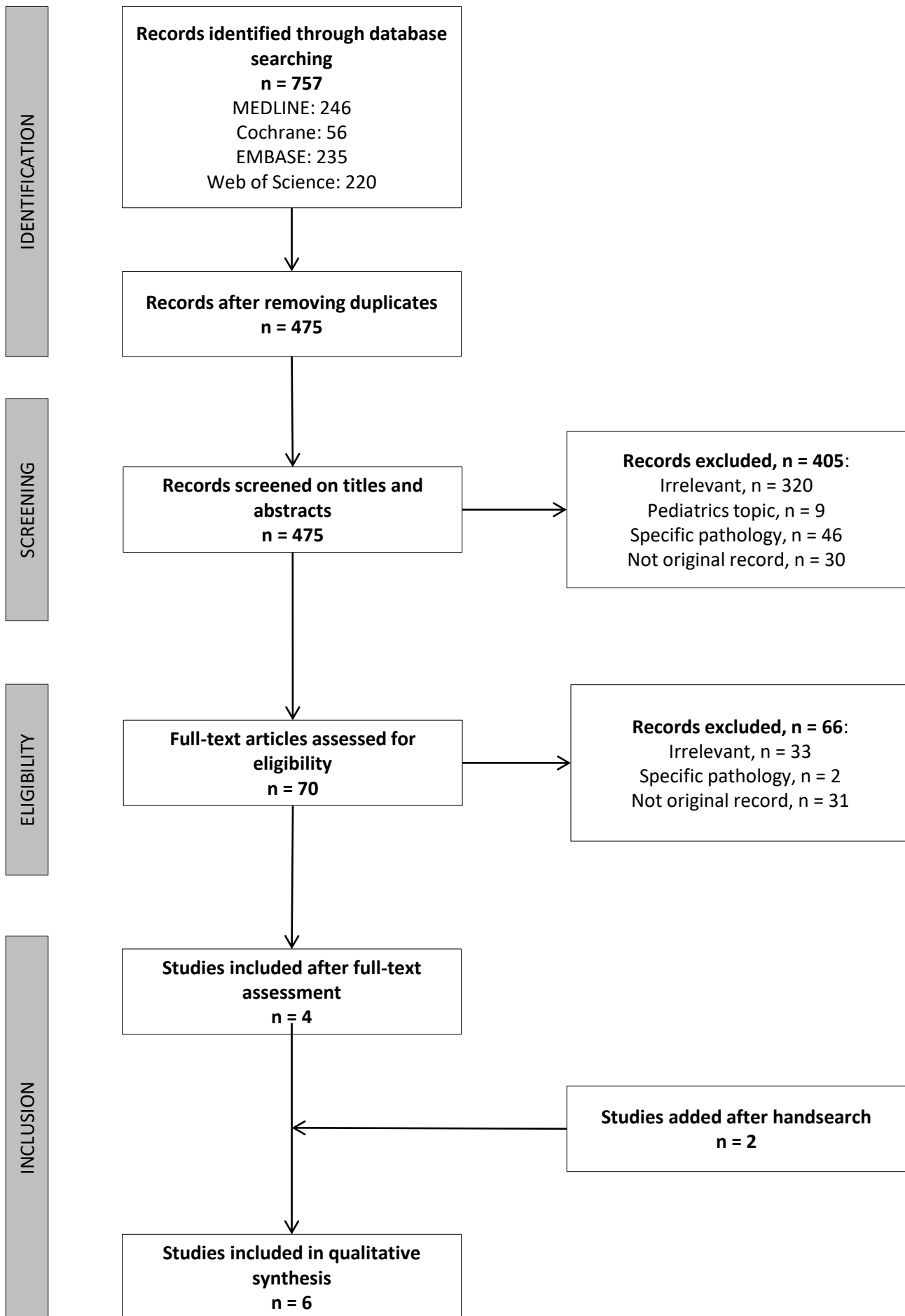
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	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Contamination bias
Bond 2014	-	-	-	+	●	+	+
Clementz 2019	-	-	-	●	●	+	+
Harper 2013	-	-	-	+	●	+	+
Harper 2017	+	-	-	+	●	+	-
Kergoat 2012	-	-	-	+	●	+	+
Trombetti 2012	-	-	-	+	+	●	+

A red minus represents a high risk of bias; a green plus represents a low risk of bias, and a yellow dot represents an unclear risk of bias.

**Table 1 - Summary of the interventions evaluated in included studies**

Study	Place of intervention	Professionals involved in the intervention	Intervention
<i>Bond et al.</i>	ED + referrals to community services	<ul style="list-style-type: none"> <li>- Ergotherapist</li> <li>- Physiotherapist</li> <li>- Pharmacist</li> <li>- Nurse</li> </ul>	ED Care Coordinator dedicated to: Supporting seniors and their caregivers to return home safely after an ED visit <ul style="list-style-type: none"> <li>- Identifying senior needs outside the ED through conducting an assessment</li> <li>- Providing referrals to home care, other community-based services, and clerical support</li> </ul>
<i>Harper et al. (2013)</i>		<ul style="list-style-type: none"> <li>- Ergotherapist</li> <li>- Physiotherapist</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment and fall risk stratification</li> <li>- Patient education</li> <li>- Functional retaining</li> <li>- Supply of equipment</li> <li>- Referrals to falls clinics or outpatient allied health service</li> </ul>
<i>Kergoat et al.</i>		<ul style="list-style-type: none"> <li>- Ergotherapist</li> <li>- Physiotherapist</li> <li>- Pharmacist</li> <li>- Nurse</li> <li>- Physician</li> <li>- Dietician</li> </ul>	Assessment and interventions addressing physical and psychosocial needs, in collaboration with families and community health and social services

**Table 1 (continued) - Summary of the interventions evaluated in included studies**

Study	Place of intervention	Professionals involved in the intervention	Intervention
Harper <i>et al.</i> (2017)	ED	<ul style="list-style-type: none"> <li>- Ergotherapist</li> <li>- Physiotherapist</li> </ul>	<ul style="list-style-type: none"> <li>- Baseline assessment for all patients by an ED-based Care Coordination Team (CCT), screening for future risk of falling and measuring functional ability</li> <li>- Brief scripted education in ED:               <ul style="list-style-type: none"> <li>o To reinforce the importance of fall prevention strategies and seriousness of falls,</li> <li>o To identifying hazards at home, appropriate footwear, common fall risk factors and strategies to manage falls</li> </ul> </li> </ul>
Clementz <i>et al.</i>	Geriatric unit in ED	<ul style="list-style-type: none"> <li>- Pharmacist</li> </ul>	Clinical pharmacy services: <ul style="list-style-type: none"> <li>- Early in-hospital medication reconciliation procedure and medication review</li> <li>- Transmission of medical records to the patients' physicians to report prescription modifications</li> </ul>
Trombetti <i>et al.</i>	Geriatric ward	<ul style="list-style-type: none"> <li>- Ergotherapist</li> <li>- Physiotherapist</li> <li>- Nurse</li> <li>- Physician</li> <li>- Dietician</li> </ul>	Multifactorial intervention program ("Chutes Et OstéoPorose" program, CHEOPS): <ul style="list-style-type: none"> <li>- Multidisciplinary systematic comprehensive assessment, to address potential fall-and-fracture risk factors</li> <li>- Intensive targeted rehabilitation therapy with exercise in individual tailored session and group sessions</li> </ul>

**Table 2 – Main results of interest for the systematic review**

Study	Number of patients readmitted to hospital in IG (% <b>, 95%CI)</b>	Number of patients readmitted to hospital in CG (% <b>, 95%CI)</b>	Relative risk reduction (%)	p-value	Number of patients revisiting ED in IG (% <b>, 95%CI)</b>	Number of patients revisiting ED in CG (% <b>, 95%CI)</b>	Relative risk reduction (%)	p-value
Bond <i>et al.</i>	4/44 (9.1, 0.6-17.6)	2/44 (4.5, -1.6-10.7)	No reduction	0.63	6/44 (13.6, 3.5-23.8)	6/44 (13.6, 3.5-23.8)	No reduction	1.000
Harper <i>et al.</i> (2013)	77/1827 (4.2, 3.3-5.1)	46/1519 (3.0, 2.2-3.9)	No reduction	0.07	106/1827 (5.8, 4.7-6.9)	68/1519 (4.5, 3.4-5.5)	No reduction	0.09
Harper <i>et al.</i> (2017)	19/97 (19.6, 11.7-27.5)	21/69 (30.4, 19.6-41.3)*	64,5	0.12†	16/97 (16.5, 9.1-23.9)	21/69 (30.4, 19.6-41.3)*	54,3	0.033†
Trombetti <i>et al.</i>	14/92 (15.2, 7.9-22.6)	7/30 (23.3, 8.2-38.5)	65,3	0.31†	NR	NR	NR	NR

\*: Information provided by authors; †: CR newly calculated (not planned by the authors); IG: intervention group; CG: control group; NR: not reported in the study.

Table 2 (continued) – Main results of interest for the systematic review

Study	Number of patients readmitted to hospital in IG (% , 95%CI)	Number of patients readmitted to hospital in CG (% , 95%CI)	Relative risk reduction (%)	p-value	Number of patients revisiting ED in IG (% , 95%CI)	Number of patients revisiting ED in CG (% , 95%CI)	Relative risk reduction (%)	p-value
Clementz <i>et al.</i>	<u>3 months</u> 30/125 (24.0, 16.2-31.8)	<u>3 months</u> 51/127 (40.2, 30.9-40.9)	59,7	<b>0.006</b> †	NR	NR	NR	NR
	<u>1 month</u> 18/125 (14.4, 8.0-20.8)	<u>1 month</u> 33/127 (26.0, 17.7-34.3)	55,4	<b>0.022</b> †				
	<u>72 hours</u> 3/125 (2.4, -0.4-5.2)	<u>72 hours</u> 10/127 (7.9, 2.8-13.0)	30,4	<b>0.049</b> †				

\*: Information provided by authors; †: CR newly calculated (not planned by the authors); IG: intervention group; CG: control group; NR: not reported in the study.

Table 2 (continued) – Main results of interest for the systematic review

Study	Number of patients readmitted to hospital in IG (% <b>, 95%CI)</b>	Number of patients readmitted to hospital in CG (% <b>, 95%CI)</b>	Relative risk reduction (%)	p-value	Number of patients revisiting ED in IG (% <b>, 95%CI)</b>	Number of patients revisiting ED in CG (% <b>, 95%CI)</b>	Relative risk reduction (%)	p-value
Kergoat <i>et al.</i>	<u>Comprehensiveness score ≥50%</u> 91/572 (15.9, 2.9-18.9)*	<u>Comprehensiveness score &lt;50%</u> 46/304 (15.1, 11.1-19.2)*	No reduction	0.76†	<u>Comprehensiveness score ≥50%</u> 159/572 (27.8, 24.1-31.5)*	<u>Comprehensiveness score &lt;50%</u> 87/304 (28.6, 23.5-33.7)*	97,2	0.79†
	<u>Informational continuity score ≥50%</u> 33/284 (11.6, 9.5-18.3)*	<u>Informational continuity score &lt;50%</u> 104/592 (17.6, 14.5-20.6)*	65,9	<b>0.023</b> †	<u>Informational continuity score ≥50%</u> 69/284 (11.6, 7.9-15.3)*	<u>Informational continuity score &lt;50%</u> 177/592 (17.6, 14.5-20.6)*	65,9	0.21†
	<u>Comprehensiveness + informational continuity scores ≥50%</u> 31/238 (13.0, 8.7-17.3)*	<u>Comprehensiveness + informational continuity scores &lt;50%</u> 106/638 (16.6, 13.7-19.5)*	78,3	0.19†	<u>Comprehensiveness + informational continuity scores ≥50%</u> 59/238 (24.8, 19.3-30.3)*	<u>Comprehensiveness + informational continuity scores &lt;50%</u> 187/638 (29.3, 25.8-32.8)*	84,6	0.19†
	<u>All items of patient-centered care</u> 33/209 (15.8, 10.8-20.7)*	<u>Not all items of patient-centered care</u> 104/667 (15.6, 12.8-18.3)*	No reduction	0.95†	<u>All items of patient-centered care</u> 57/209 (27.7, 21.2-33.3)*	<u>Not all items of patient-centered care</u> 189/667 (28.3, 4.9-31.8)*	97,9	0.77†

\*: Information provided by authors; †: CR newly calculated (not planned by the authors); IG: intervention group; CG: control group; NR: not reported in the study.