



Preliminary results of a systematic review focusing on the effectiveness of the interventions in preventing the progression of frailty in older adults

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INTRODUCTION

- Frailty is an **age-related state of high vulnerability to adverse health outcomes** after a stressor event.
- Frailty predisposes the individuals to progressive decline in different functional domains (Figure 1) and contributes to the onset of geriatric syndromes (Clegg et al., 2013; Fried et al., 2004).
- Various types of intervention in preventing the frailty progression have been proposed. However, there is no systematic review that critically analyzes the existing evidence.

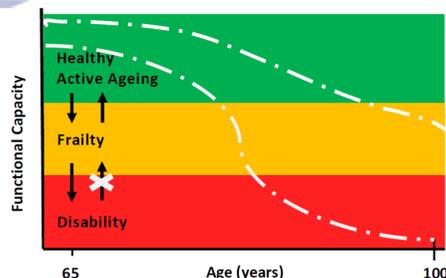


Figure 1. Trajectories of functional decline

OBJECTIVES

- **Objective:** Summarize the best available evidence in relation to the effectiveness of the interventions in preventing progression of frailty in older adults.
- **Specific questions:**
 - What is the effectiveness of interventions in preventing or reducing frailty in older adults, and how does it vary with degree of frailty?
 - Are there factors that influence the effectiveness of those interventions?
 - What is the economic feasibility of interventions for frailty?

METHODS

- The review process was based on Joanna Briggs Institute procedures (2014).

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria:

Population: Participants aged 65 and over, explicitly identified as pre-frail or frail and receiving health care and support services in any type of setting.

Intervention: Interventions focusing on the prevention of frailty progress.

Comparator: Usual care, alternative therapeutic interventions or no intervention

Outcomes: (i) **Frailty** indicated by any validated scale or measurement or index

(ii) **Clinical outcomes:** quality of life, activities of daily living, functional capacity, cognition, caregiver burden, drugs and prescriptions, analytical parameters, adverse outcomes, etc.

(iii) **Economic outcomes:** costs and/or costs relative to benefits and/or savings associated with implementing the interventions for frailty

Exclusion criteria: selection based on specific illness or on terminal diagnosis only

SEARCH STRATEGY

- **Publication date:** from January 2001 to November 2015
- **Languages:** English, Portuguese, Spanish, Italian, Dutch
- **Databases for published studies:** CINAHL, MEDLINE, SCOPUS, EMBASE, Cochrane Central Register of Controlled Trials, Scielo
- **Databases for unpublished studies:** ProQuest Theses and Dissertations, OpenGrey, Banco de teses de CAPES, Dissertations Abstracts Online (e-Thos)
- **Keywords:** elder* OR old*; frail* OR pre-frail*; intervention* OR therap* OR treatment* OR program*; effec* OR efficacy

ASSESSMENT OF METHODOLOGICAL QUALITY

- **Assessment tool:** Joanna Briggs Institute Critical Appraisal Checklists for (i) Experimental Studies, (ii) Comparable Cohort and Case Control, (iii) Descriptive and Case Series, (iv) Economic Evaluations
- **Process:** Two reviewers assessed independently the selected papers. Any disagreements were resolved through discussion or with a third reviewer.
- **Cut-off point for inclusion:** ≥ 5 affirmative responses on the appraisal checklist.

RESULTS

- **21 RCTs included** (Figure 2).
- **Main methodological strengths:**
 - identical procedures used for outcomes assessment in control and intervention groups (100%)
 - use of statistical analysis (100%)
- **Main methodological problems:**
 - lack of participant blinding (90%)
 - differences on the treatment of the intervention and control groups (62%)
 - lack of cultural adaptation of the assessment tools (57%)
- **High variability on frailty definition** and on operationalization of frailty indicators was also observed.

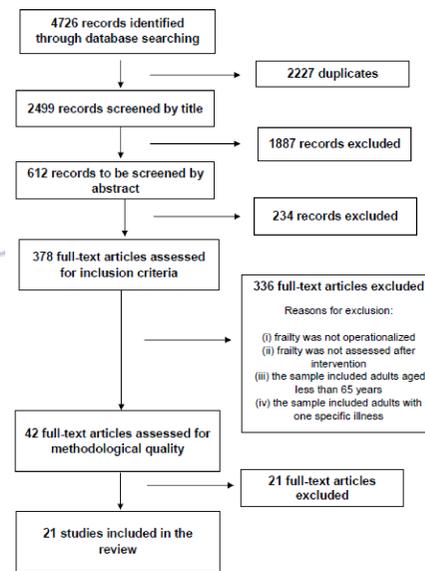


Figure 2. Flowchart for the search and selection process

Interventions described in the included studies:

exercise (n=7), supplementation (n=4), exercise and supplementation (n=2), multidisciplinary approach (n=5), home visits (n=4), group meetings (n=3), cognitive training (n=1), problem solving therapy (n=1), educational session with geriatrician (n=1)

FRAILITY

- **Interventions reducing frailty or postponing its progression:** exercise programs conducted in group, exercise and supplementation, protein supplementation, cognitive training, educational session with geriatrician
- **Inconsistent results:** group meetings, home visits and multidisciplinary approach.
- **Lack of efficacy:** home-based exercise or exercise performed individually, hormone supplementation, problem solving therapy.

SECONDARY OUTCOMES

- Different interventions had different effects on secondary outcomes.
- The positive changes were most frequently observed for **functional capacity, mental health and analytical parameters**.
- The analyzed interventions were less beneficial for **cognition**.

CONCLUSIONS

- Further studies on the analyzed interventions are needed to consolidate the findings and make them more generalizable.
- There is also a need for more consistency on frailty operationalization to facilitate the dialogue between health care professionals, social care practitioners, researchers and policy-makers.

IMPLICATIONS

- It is expected that the optimization of frailty treatment will have **positive impact on care** for older adults, **minimizing the risk of adverse consequences** and **ameliorating the impact on independence or healthy and engaged lifestyles**. Other possible implications are related with better management of healthcare costs.

REFERENCES

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