Identification and Management of Frailty in Older People in Brazil: a scoping review protocol.

Abstract

Objective: to scope the evidence on how researchers, health and social care professionals in Brazil currently identify and manage frailty in older adults.

Introduction: rapid population aging and associated increased healthcare usage by older people with frailty are challenging the sustainability of healthcare for older people in Brazil. Understanding how frailty is identified, measured, categorized and managed in Brazil is an important part of building a response to the challenge.

Inclusion criteria: this scoping review will consider studies that included Brazilian older adults (ε60 years old) recruited from different settings (community, primary care, health care centers, hospital and long-term care institutions). The articles will be included if they involved any kind of frailty assessment (tools, scales, and measures) and/or interventions. This review will consider all study designs, regardless of rigor. National policies for older people will be also considered for analysis.

Methods: Indexed and gray literature in English and Portuguese from 2001 to the present will be considered. The searches will be conducted using bibliographic databases, university repositories and the Brazilian Government official database. The studies will be independently screened according to the inclusion criteria by two authors based on their title, abstract and full text. In case of disagreement, a third author will be consulted. A customized data extraction form will be used to extract data from the included studies. The results will be presented in tabular form, accompanied by a narrative summary related to the objective of the present scoping review.

Keywords: aged; frailty; prevention and control

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Introduction

The term *frailty* emerged in the beginning of this century and is broadly defined as a clinical state, in which there is an increase in an individual's vulnerability to developing disability and/or mortality when exposed to a stressor.[1] There are different operational definitions for frailty, ranging from physical or phenotypic criteria (e.g. Fried's phenotype criteria)[2], through deficit accumulation models (e.g. Frailty Index)[3] to multidimensional, biopsychosocial integral conceptual models, which combine physical and psychosocial domains.[4] Regardless of the criteria used, frailty is associated with adverse health outcomes (including falls, disability, hospitalization, institutionalization, and/or death).[5]

The prevalence of frailty and pre-frailty appears to be higher in community-dwelling older adults in upper middle-income countries compared with high-income countries, which has important implications for healthcare planning.[6] In high-income countries, frailty prevalence is estimated to range from 9.9 to 13.6%, with an overall weighted prevalence of 10.7%.[7] A meta-analysis of frailty prevalence in upper middle-income countries,[8] including many studies from Brazil (i.e. 24 that accounted for 57% of all studies included in the meta-analysis), showed that frailty varied from 3.9 to 51.4% and pre-frailty ranged from 13.4% to 71.6%. The pooled prevalence of frailty for upper middle-income countries included in this meta-analysis was 17.4 and 49.3% for frailty and pre-frailty, respectively.[8] The authors attributed this wide variation in prevalence partly due to the differences in frailty tools used among the studies.

Currently, there is no gold-standard method to identify frailty. However, two of the mentioned models are in widespread use for frailty identification.[2,3,9,10] The first one, known as the Frailty Phenotype, is based on a physical perspective, as the association among some physical components (weight loss, exhaustion, weakness, slowness, and reduced physical activity) marks an underlying physiologic state of multisystem and energy imbalance.[2] The second model, more comprehensive and multifactorial, is based on deficit accumulation throughout life, consisting of a chosen number of impairments and conditions that are biologically sound, saturated with aging, and that predispose older people to negative outcomes. The division of the sum of those factors by the number of total variables yields the Frailty Index.[3,9,10]

In order to establish an international consensus, a group of representatives from 6 major international societies suggested four major points about frailty: 1) definition: "a medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual's vulnerability for developing increased dependency and/or death"; 2) management: **"**physical frailty can potentially

be prevented or treated with specific modalities, such as exercise, protein-calorie supplementation, vitamin D, and reduction of polypharmacy"; 3) evaluation: "simple, rapid screening tests have been developed and validated, such as the simple FRAIL scale, to allow physicians to objectively recognize frail persons" and 4) target: "all persons older than 70 years and all individuals with significant weight loss (≥5%) due to chronic disease should be screened for frailty".[1]

It is important to recognize that the idea that all aspects of frailty can be treated in a particular medical sense has been challenged. As a complex long-term condition it benefits from multi-dimensional approaches to care, many of which are designed not to cure, or even slow, frailty but to support people experiencing frailty to compensate for its effects[11,12]. It is therefore more inclusive to use the term "management" to refer to health and social care responses to frailty, rather than the term "treatment".

Considering the negative outcomes associated with frailty, identifying and managing it in different settings can help to improve the quality of care services for older people and the quality life of frailty people as well. In this way, some countries are adopting guidelines for identification and management of frailty. In the United Kingdom, for example, guidelines[13,14] recommend that older people should be assessed for the presence of frailty during all encounters with health and social care professionals, using a specific questionnaire (PRISMA), slow gait speed and timed up-and-go test. Provision of training in frailty identification for aging care professionals (health and social) is also supported by the guideline. Once frailty is identified, there are ten recommendations to manage it (for example, carrying out a comprehensive review of frail older people's needs, ensuring that reversible medical conditions are adequately covered, conducting personalized review of prescription drugs, generating a personalized shared care and support plan, and establishing protocols and shared systems to better assist frail older people in different settings).

The diversity of conceptual and operational models for frailty contributes to a wide variety of tools to screen for, identify and measure it, making it more difficult for researchers and clinicians to choose the most appropriate one.[15-17] Moreover, many of the frailty instruments seem not to meet all validity and reliability criteria. In Brazil, the scenario is the same, which may generate uncertainty about how to measure frailty among those involved with care of older people. In the attempt to identify the frailty concepts and assessment tools used in Brazil, a group of researchers published a Frailty Consensus based on a task force to review the Brazilian scientific production in this theme.[18] According to this consensus, the recognition of frailty as a syndrome is important to identify older adults at risk of negative outcomes and to improve health care for people with frailty at an individual level. The group suggested, however, that much more must be

done in Brazil, mainly in terms of establishing rapid frailty assessments and management strategies for different settings. Although the task force raised important points for further studies, the searches used for their narrative review were conducted in only two databases, did not include policies and the synthesis did not follow an established systematic or scoping review structure.

The absence of a gold standard tool to measure frailty complicates comparisons between studies and the interpretation of intervention results. Although previous literature has evaluated a large number of interventions for frail older adults, there are still few studies that focus on frailty in both initial measures and primary outcomes, instead of an element of frailty (e.g. grip strength), hospitalization or mortality.[19,20] A systematic review,[20] for example, found mixed results regarding the effectiveness of frailty interventions. The authors found that physical exercise interventions are generally effective in reducing or postponing frailty. Favorable effects on frailty indicators were also observed after interventions such as physical exercise with supplementation, supplementation alone, cognitive training and combined interventions.

A search of PubMed and the JBI *Database of Systematic Reviews and Implementation Reports*, using the search term “frailty”, was performed and there are no current scoping reviews about identifying and managing frailty in Brazil. Whilst Puts *et al.*[19] published a scoping review of the literature and international policies about interventions to prevent or reduce the level of frailty in community-dwelling older adults this did not include Brazilian evidence and thus the recommendations are less generalizable to the Brazilian context. Puts *et al.*[19] included 14 studies, mainly from USA and Japan. The interventions identified in this review included physical exercise (alone or combined with nutrition support and memory training, prehabilitation (physical therapy plus exercise plus home modifications) and comprehensive geriatric assessment. In addition, only European guidelines on frailty management were presented. Whilst there are clear recommendations based on international evidence located in previous reviews,[20,21] scoping the full range of evidence available for the Brazilian context will allow a comparison to international research to determine what assessment tools and interventions will be most relevant for the Brazilian policy and health care context. Previous authors have carried out scoping reviews to determine the level of evidence specific to individual countries and provided useful recommendations for local policy – for example Bautista and Malhotra[22] published a scoping review on identification and measurement of frailty among older adults in Singapore.

Against this background, the objective of this scoping review is to identify relevant scientific peer-reviewed journal articles and gray literature on tools and interventions to respectively identify and manage frailty in Brazilian older adults.

Review question:

The review question for this scoping review is: How are researchers, health and social care professionals identifying, measuring, categorizing and managing frailty in Brazilian older adults? Specifically, we will identify 1) which tools are being used and recommended to identify frailty in Brazil and 2) which interventions are being evaluated, used and recommended to manage frailty in Brazil.

Inclusion criteria

Participants

This review will consider studies that include or policies that refer to Brazilian older adults (60 years old and over)[23] recruited from different settings (community, primary care, health care centers, hospital and long-term care institutions). As there is a wide range of health and social care professionals that could be involved in the frailty management, no strict range will be set for the professionals in this review.

Concept

Frailty is the main concept of the present review. Due the different operational definitions for frailty used in the literature, articles will be included if frailty assessment has been conducted using any kind scales, tools or measures. Frailty management will be considered when any type of intervention (defined as any action taken by a health or social care professional or an older person to reduce the progression and/or reverse the level of frailty) has been used or recommended in national policies.

Context

This review will consider only articles and dissertation/theses conducted in Brazil. In terms of health, life expectancy at birth in Brazil is 74.7 years old, six years lower than the Organization for Economic Co-operation Development average of 80.6 years.[24] However, Brazil is the 5th largest country in the world, developing, and has a rapidly ageing population. In addition, the number of the oldest old (85 years old and older) in Brazil is also increasing together with the life expectancy.[25] This specific portion of the population is the one that commonly suffers with frailty.[19] The potential increased healthcare usage by older people with frailty presents a challenge to the sustainability of healthcare for older people in Brazil.

Type of studies

This review will consider all study designs, regardless of rigor. National policies for older people will be also considered for analysis.

Methods

The present review will be conducted based on the Joanna Briggs Institute (JBI) guidelines, [26] the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR)[27] and previously published recommendations about scoping review methodology.[28-31]

Search strategy

Considering that the term *frailty* was first used to describe a measurable clinical syndrome by Linda Fried in 2001, the search period will be limited between 2001 (January 1st) to the present. It will include studies published in English and Portuguese with different research designs (descriptive, correlational, semi-experimental, experimental and policies). The studies will be included if they 1) are published in peer-reviewed journals (retrieved from search databases), are products from master and doctoral thesis (retrieved from Brazilian universities repositories) and official government documents (retrieved from governmental databases); 2) include older men and women (aged 60 years and over); and 3) are conducted in older adults that live in Brazil and participate in studies about frailty.

For the present scoping review, the following key words and their synonyms will be combined and search both in English and Portuguese when appropriated: “frailty” (fragilidade) AND “elderly” (idoso) AND “Brazil” (Brasil). As preliminary searches returned fewer numbers of studies when the key words “intervention” or “treatment” were added in the search algorithm, the authors decided to pursue a more open wide search (i.e., without these key words). The results of each search will be loaded into Endnote Web library database. A full search algorithm (Pubmed/MEDLINE) is presented in Appendix 1. Hand searching and screening of reference lists of included studies will be performed to identify other potential studies that meet the inclusion criteria.

Information sources

For published studies, electronic searches will be conducted in the following databases: MEDLINE through Pubmed, Ageline, LILACS, Scielo, CINAHL, Scopus, PeDRO and JBI Database of systematic Reviews and Implementation Reports.[26] The search for unpublished

studies (gray literature) will be conducted in Theses and Dissertations Catalog (https://catalogodeteses.capes.gov.br) from Coordination for the Improvement of Higher Education Personnel (CAPES) and in the Brazilian Government official database for laws and policies (http://www4.planalto.gov.br/legislacao/). Additionally, any key websites identified during searches and reading of policy documents will also be searched.

Study Selection

Following the search, the studies will be independently selected according to the inclusion criteria by two authors from the research team based on their title and abstract. In case of discordance, a third author will be consulted. For more detailed analysis, suitable studies will be read in full by two authors and the discrepancies will be solved by a consensus between them. Studies that may meet the inclusion criteria will be retrieved in full and their details imported into in the Endnote Web library database. The review decision process will be presented in a PRISMA flow chart, including the results from the search (research databases and additional sources), removal of duplicate citations, phases of studies selection (title/abstract and full text), reasons of excluded papers after full text read and final number of included studies.

Data extraction

Data will be extracted from studies included in the review by two independent authors using a data extraction form aligned to the objectives and questions of this research, as recommended by the Joanna Briggs Institute Based for data charting.[28-31] Any disagreement between the authors will be solved by consensus. For data extraction, an extraction form has been developed specifically for this scoping review. The information to be extracted from the included studies is presented in Appendix II. The data extraction form will be piloted on five studies and modified as necessary during the process of extracting data.

Data Presentation

The results will be presented in tabular form, accompanied by a narrative summary related to the objective of the present scoping review. A data presentation table will be developed, based on the extracted data, grouped according to study type. The findings will be discussed with regards to future research, practice and policy for the Brazilian context.

Relevance and dissemination

The present scoping review has the potential to inform policy-makers, clinicians, healthcare professionals and researchers on how frailty is assessed and managed in Brazil. The evidence identified will be helpful to improve not only the research in this field, but may also give support for the development of Brazilian guidelines for managing frailty in the future. The complete

scoping review will be disseminated through presentation at national conferences about aging in Brazil (e.g. Brazilian Geriatric and Gerontology Society) and publication in a peer-reviewed international journal.

Conflicts of interest

The authors declare no conflict of interest.

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Appendix I: Search stragegy

MEDLINE/PubMed
Search conducted on September 15th, 2019.

Search	Query	Records retrieved
#1	Search (frail elderly[MeSH Terms]) OR frail*[Title]	13670
#2	Brazil*	351931
#3	(((((((aged[MeSH Terms]) OR older adult*[Title/Abstract]) OR oldest old[Title/Abstract]) OR elder*[Title/Abstract]) OR old age[Title/Abstract]) OR ageing[Title/Abstract]) OR geriatr*[Title/Abstract]) OR later life[Title/Abstract]) OR oldest-old[Title/Abstract]	3135385
#4	((#1) AND #2) AND #3 Filters: Publication date from 2001/01/01	267

Appendix II: Draft of the data extraction form.

Reviewer name/number:	
Bibliographical details:	
- authors: - year: - article title - source (journal, volume, issue, page numbers, internet address) or dissertation/thesis (university, internet address)	
Study details:	
- type of study - sample size - details about participants (age, sex, schooling, prevalence of frailty, associated factors, etc) - setting (community, hospital, primary care, long-term care, etc). - objectives	
Information specific for this scoping review:	
- frailty diagnostic scale/tool used (name, abbreviation and details about frailty classification) - reported interventions/treatment for frailty (modality, characteristics and duration, etc) - primary outcomes and/or principal variables evaluated	
Principal results/findings:	
Specific for policies and health reports:	
- overall recommendation for health care of Brazilian older people. - specific recommendation for care of Brazilian older people with frailty	