

# We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

**4,800**

Open access books available

**122,000**

International authors and editors

**135M**

Downloads

Our authors are among the

**154**

Countries delivered to

**TOP 1%**

most cited scientists

**12.2%**

Contributors from top 500 universities



**WEB OF SCIENCE™**

Selection of our books indexed in the Book Citation Index  
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?  
Contact [book.department@intechopen.com](mailto:book.department@intechopen.com)

Numbers displayed above are based on latest data collected.

For more information visit [www.intechopen.com](http://www.intechopen.com)



# Current Perspectives on Frailty in the Elderly, Evaluation Tools and Care Pathways

*Wilson Abreu and Margarida Abreu*

## Abstract

The concept of frailty is frequently mentioned in studies related to the elderly population. Frailty in the elderly is considered a relevant dimension of quality of life. The concept of frailty has grown in importance because of a need to evaluate the health status of older persons and a need to prevent or at least delay late-life disability and total dependence on self-care. There is to date no clear consensus regarding the definition of frailty; some definitions have been proposed, each with their own strengths and weaknesses. Just as conceptual disagreements arise about what frailty means, there are also disagreements about how to assess it. However, as researchers deepen the concept of frailty and the way to operationalize it, scales and inventories appear that allow us to have a more precise idea of the state of frailty. This aspect is extremely important because assistance strategies may depend on it. One of the most cited aspects is the assessment of the need to provide palliative care. In this chapter, we intend to review the concepts of frailty, operationalization strategies and assessment tools and clarify some ideas from the debate on what frailty is.

**Keywords:** cognition, dependence, elderly, frailty, functionality

## 1. Introduction

The concept of frailty is frequently mentioned in studies related to the elderly population—health status, self-care dependence, healthcare resources or even the configuration of the wards where care is provided. Looking at the scientific knowledge and clinical practice, frailty in the elderly is considered a relevant dimension of quality of life. Moreover, there is a tendency to accept that individuals with severe frailty have to be considered vulnerable and should be protected.

Frailty has been viewed as a cornerstone of geriatric medicine and a platform of biological vulnerability to a host of other geriatric syndromes and adverse health outcomes [1], such as long-term nursing home stay, injurious falls and death, in community-dwelling older adults independent of medical comorbidities and age. The expression “frailty elderly” was used for the first time in 1970, by researchers from the Federal Council on Aging (FCA) of the United States, with the purpose of describing elderly people who lived in unfavourable socioeconomic conditions and presented physical weakness and cognitive deficit that, with advancing age, began to demand more care; in the 1980s, frailty in the elderly people was understood

mainly as synonymous of disability or the presence of a disease, chronic or extreme condition linked with ageing [2]. In 1990, the expression “frailty elderly” was referred for the first time on the *Journal of the American Geriatrics Society* index [2].

The term “frailty” started to be used frequently in terms of diagnosis, clinical decisions and provision of care. Frailty and cognitive and functional decline are relatively common in older dependent people with health problems. One of the challenges for researchers today has been to study the physical characteristics and psychological symptoms of frailty and to relate them to adverse health outcomes. In this chapter, we intend to analyse the matters that have most attracted the attention of researchers and health professionals who deal with people in situations of frailty.

Understanding frailty has become crucial for caring for the elderly. In older people with dementia, the assessment of frailty is more important than determining the degree of dementia, since it is crucial to develop appropriate care people need; there are old people with moderate dementia but with a severe level of frailty.

In this chapter, we intend to review the concepts of frailty, operationalization strategies and assessment tools and clarify some ideas from the debate on what frailty is.

## **2. Concept of frailty**

The concept of frailty has grown in importance because of a need to evaluate the health status of older persons and a need to prevent or at least delay the onset of late-life disability and its adverse consequences [3]. There is to date no clear consensus regarding the definition of frailty; some definitions have been proposed, each with their own strengths and weaknesses [3].

Frailty is a multidimensional concept and can be defined as a dynamic state that affects an individual with declines in one or more domains, such as physical, cognitive, social, attention or senses [4]. There is usually a dependence on self-care and need of support from others. Elderly does not mean frailty, but the ageing process led to frailty, which means that there are changes that reflect ageing-related alterations and involve intrinsic and extrinsic factors which are typical of ageing.

The occurrence of frailty is mainly a state of vulnerability resulting from comorbidities and the overall decline in organ functions. The progression to later stages of dementia often signals a loss of autonomy, dependence and reduction in physical and cognitive function. Frailty of people is positively related with their caregiver burden and associated with higher levels of depression on the caregiver. A lack of understanding about frailty has been identified as a barrier to providing optimal care to elderly people, for example, people with advanced dementia [4].

Frailty is an emerging concept used in the field of geriatrics and gerontology, to make reference to the clinical condition of the elderly. There is a deficit of information regarding the incidence and prevalence of frailty in the elderly, mainly due to the lack of consensus definition that can be used as reference in different populations. There is usually a “clinical sense” about what is frailty and what a frail elderly person is, but there is no agreement, a standard definition regarding this concept, that can assist in the diagnosis of frailty condition. As mentioned above, frailty is often considered an inherent condition of ageing, an attitude that can cause late interventions with minimal potential for prevention or reversing the consequences and adverse effects from the problem.

The concept of frailty, widely used in the recent years, focuses primarily on the physical dimensions. That is why it is understood that the criteria for assessing presence/absence are the physical signs and symptoms, sedentary behaviour, weight loss, exhaustion, slowed gait, decreased muscle strength, with three or more

of these five criteria we are facing physical frailty and the presence of one or two criteria indicates pre-physical frailty [5].

The diagnosis of frailty relies currently on the assessment of a small subset of easily measurable clinical markers. Just as conceptual disagreements arise about what frailty means, there are also disagreements about how to evaluate it. While recognizing the multifactorial nature of frailty, it is important to develop an “operational definition” of frailty that is simple enough to be used clinically and to guide prevention and care [3].

Frailty among older persons appears in the investigation as a dynamic process, characterized by frequent changes over time. The evolution of frailty incorporates quantitative and qualitative data, which motivated researchers to invest in modeling. Recent studies have highlighted age, medical factors and higher socioeconomic status to be protective [6]. In the study carried out by the *Canadian Study of Health and Aging* (CSHA) [6], it was concluded that cognitive status and frailty are associated. Functional decline contributes to increase costs in caring for people with dementia. Despite all the research related to Alzheimer’s disease, very little has been indicated as effective therapies to deal with the disease, although it is known that cognitive decline is one of the first symptoms to appear and that interventions at this level can delay the evolution of the disease [6].

Andrade et al. [2] state that currently, two research groups have distinguished in the pursuit of consensus on the definition of frailty in the elderly: one of them in the United States, at the Johns Hopkins University, and the other one in Canada, the Canadian Initiative on Frailty and Aging (CIF-A). The group of researchers from the Johns Hopkins University produced an operational definition of frailty in the elderly and proposed measurable and objective criteria to the phenomenon. This operational definition starts from the hypothesis that the term is a geriatric syndrome and it can be identified by means of a phenotype that includes five measurable components: (a) unintentional weight loss, greater than 4.5 kg or more than 5% of body weight in the last year; (b) signs of fatigue; (c) reduction of handgrip strength, assessed with a specific instrument and adjusted to the person’s sex and body mass; (d) little physical activity assessed by calorie consumption (measured in kcal), adjusted by sex; and (e) reduction of march activity in seconds, distance of 4.5 m adjusted by gender and height [2].

A second definition was formulated by researchers from the CIF-A, indicated above. This is based on a multidimensional construct—frailty was defined using a more holistic approach, which emphasizes the complex aetiology of the phenomenon, understood as a not optimal condition in elderly, multifactorial and dynamic in nature, relating it to its history or trajectory of life [2]. The indicated trajectory can be shaped by biological, psychological and social, whose interactions result in resources and/or individual deficits in a given context. A tool was developed to measure frailty in the elderly—the Edmonton Frail Scale (EFS)—contemplating nine domains: (I) cognition, (II) general state of (III) functional independence, (IV) support, (V) medication use, (VI) nutrition, (VII) humour, (VIII) continence and (IX) functional performance. These authors consider this scale more comprehensive, especially considering aspects of cognition, humour and social support [2].

### **3. Types and dimensions of frailty**

Some definitions of frailty promote a multidimensional approach based on an evaluation according to “frailty indexes”, which are calculated considering the accumulation of possible deficits, such as the presence of diseases, abnormal laboratory values, signs and symptoms or disabilities [7, 8].

It is difficult to establish a typology of frailty, given its multidimensional nature. On the one hand, frailty results from an articulation of factors of a physical and psychological nature. On the other hand, it is possible to assess frailty to highlight one or another aspect. Also, the investigation indicates that emotional management strategies can interfere with the signs and symptoms of frailty and with the ability to adjust to different disabilities.

Given the definitive trends in frailty, and although the creation of a typology is sometimes an academic task, we will try to describe four types of frailty in the elderly, on the assumption that they intersect and present common dimensions: physical, cognitive, social and emotional.

Frailty is a clinical situation known for the great vulnerability of the person in terms of the different physiological systems. In addition to the physical dimension, frailty is characterized by problems at the social, emotional and cognitive levels, despite the possibility of delaying its evolution in early stages [3, 9]. Fried et al. [10] proposed a clinical phenotype of frailty, defining it as a situation of increased vulnerability in the person for homeostatic resolution after pronounced distress. This growing vulnerability increases the risk of adverse outcomes, such as falls, fractures, hospitalization and ultimately mortality in elderly people living in organizations in the community or in their own homes.

Four main mechanisms can be identified in the progression of frailty: atherosclerosis, sarcopenia, cognitive deterioration and malnutrition [11]. It has been proven that malnutrition can be the cause of cognitive and functional decline and that the lack of some nutrients can cause cognitive frailty and vascular dementia [11].

There is an evident relationship between functionality and cognition, as evidenced by research evidence and some assessment tools (e.g., Clinical Dementia Rating). Many cross-sectional studies demonstrated the relationship between general cognitive function, emotions and physical frailty [12]. However, it is important to keep in mind that the decline in cognition and capacity of emotional management, given its functions and nature, evokes so many limitations to functionality that it becomes relevant to consider a cognitive frailty as a specific type.

Many studies have focused on the proposed entity of “cognitive frailty” to describe a clinical condition that is characterized by simultaneous occurrence of physical frailty and cognitive impairment in the absence of overt dementia [13]. Alzheimer’s disease is characterized by an association between physical and cognitive decline, but in the opposite direction, people with physical limitations are more predisposed to suffer emotional and cognitive problems. However, it should be noted that in recent years studies are more focused on physical frailty, with a relative paucity of data available for concomitant transitions in cognitive status [6].

An International Consensus Group studied the “cognitive frailty” condition. “Cognitive frailty”, although so defined, implies the presence of physical and cognitive decline. The key symptoms to characterize cognitive frailty are as follows: (1) presence of physical frailty and cognitive impairment and (2) exclusion from the concomitant presence of any type of dementia [14]. At the same time, the group indicated that “cognitive frailty” implies a rigorous diagnosis in terms of memory performance but also of other cognitive functions [14].

“Cognitive frailty” could represent a cognitive entity with specific neuropsychological patterns (executive and selective attention) [14]. The mechanisms in action and how deterioration occurs are not yet fully understood.

The loss of emotional management capacities and of establishing social interactions generates potential situations of frailty. It is also evident that any types of frailty (physical or psychological) also interfere with the emotional and social spheres. Usually, people with frailty (with cognitive impairment) experienced high

levels of emotional discomfort and behavioural changes. Even without significant cognitive changes, symptoms usually emerge that emphasize the importance of emotions and social interactions: sadness, loneliness, nervousness, concern for oneself, self-concept, self-care and sense of hope.

The relationship between emotions, behaviour and frailty emerges in studies that explore this association. Emotion, which can be considered positive or negative, interferes with the perception of self-efficacy and the subjective sense of well-being. Furthermore, studies conducted in older adults found that positive emotions were associated with lower disability in the execution of daily living activities, higher levels of mobility, less physical dependence and major likelihood of survival, as well as higher level of adjustment to chronic health problems; on the other hand, negative emotions are correlated with stress sensations and poor coping abilities [15].

Clark and Watson [16] emphasize the relationship between emotions and functionality, which is understood by the well-known association between emotions and behaviour. They concluded, in a study carried out with older adults, that positive emotions may be associated with lower disability in the execution of daily living activities, better mobility, good functional status and major likelihood of survival; on the contrary, negative emotions can be correlated with distress and poor coping abilities. Mulasso et al. [15] provide empirical evidence to the multidimensional theorization and definition of frailty, hypothesizing that a reduced level of positive emotions and high level of negative emotions may contribute to increases in the severity of frailty condition; on the other hand, they highlighted the role of emotion experience in interventions for the prevention of frailty, such as interventions of physical exercise or cognitive training associated with frequent experience of positive emotions.

Simultaneously, studies emphasize also the need to identify risks for frailty [4, 6, 9]. All dimensions that constitute limitations on functionality, carrying out activities of daily living, cognitive impairment and social isolation can and should be considered risks for frailty [4]. There are currently models, mathematical equations and Bayesian networks that allow identifying these risks and even predicting them, conjugating certain variables. Usually, these models take into account demographic, social and clinical variables. These models can have good performance, isolated or conjugated with other evaluation tools. Moreover, they can predict frailty evolution and enable dependent persons to be identified for further specific assessment or interventions.

#### **4. Frailty: evidences from research**

There are many studies that explore frailty, types of frailty and predictors of frailty every year. The relationship between frailty and functionality and the psychological sphere and relationship between the frailty of the recipient of care and burden on the caregiver are increasingly studied.

Armstrong et al. [17] used of a large database (n = 23,952) with comprehensive health information on home care clients (aged 65+) of eight Community Care Access Centres (CCACs) in Ontario, Canada. In this large cohort of older home care clients, they found that greater evidence of frailty as defined by each of the three measures was associated with greater risk of adverse outcomes. This result additionally confirmed the potential utility of a frailty concept for identifying vulnerable individuals within the home healthcare sector. They concluded that mathematical models can utilize data collected during clinical assessments to provide a quantitative indicator of a client's level of frailty.

Dudzińska-Griszek, Szuster and Szewieczek [18] developed a study whose aim was to assess conditions that influence grip strength in geriatric inpatients. A comprehensive geriatric assessment was complemented with assessment for the frailty phenotype. Functional assessment included Barthel Index of Activities of Daily Living (Barthel Index), Instrumental Activities of Daily Living Scale and Mini-Mental State Examination. The conclusion was that cognitive function, somatic comorbidity and medical treatment affect grip strength as a measure of physical frailty in geriatric inpatients.

A retrospective cohort study on 18,341 Medicare Advantage enrollees aged 65+ was conducted by Anzaldi et al. [19] in Massachusetts. When analysing the clinical information systems, they identified the presence of 10 syndromes commonly found in the elderly (falls, malnutrition, dementia, severe urinary incontinence, absence of faecal control, visual impairment, walking impairment, pressure ulcers, lack of social support and weight loss), as well as references to the presence of frailty identified in the natural language processing (NLP) algorithm. The main conclusion was that patients identified as “frail” by providers in clinical notes have higher rates of health-care utilization and more geriatric syndromes than other patients. Certain geriatric syndromes were more highly correlated with descriptions of frailty than others.

Shimada et al. [20] studied the cognitive frailty in 4570 older adults. The aim of the study was to analyse the extent to which a new perspective of cognitive frailty could be considered as a predictor of dementia. There are 2326 women and the average age was  $71.9 \pm 5.5$  years. Physical frailty was defined as the presence of more than one of these symptoms: slow walking speed and muscle weakness. Cognitive frailty was defined as comorbid physical frailty and cognitive impairment. They concluded that cognitive impairment and cognitive frailty could be considered risk factors for dementia. Findings showed clearly that individuals with comorbid physical frailty and cognitive impairment could have a higher risk of dementia than healthy older adults or older adults with either physical frailty or cognitive impairment alone.

The estimation of the prevalence of frailty in patients admitted to intensive care unit (ICU) and its impact on intra-ICU mortality, at 1 month and at 6 months, was developed by Cuenca et al. [21]. A prospective cohort study was conducted. Frailty was present in 35% of patients admitted to the ICU, associated with higher rates of mortality.

Ma et al. [22] carried out a study to determine social frailty status via developing a simple self-reported screening tool, termed the HALFT scale, and to examine the association between social frailty and physical functioning, cognition, depression and mortality among community-dwelling older adults. They state that social frailty is related to adverse health-related outcomes. Moreover, they added that research into the relationship between social frailty and physical functioning remains limited. A prospective cohort study was carried out, with 1697 community-dwelling adults aged  $\geq 60$  years from Beijing. The scale developed was based on five items: unhelpful to others, limited social participation, loneliness, financial difficulty and not having anyone to talk to.

The prevalence of social frailty in the participants was 7.7%. Social frailty was positively associated with physical frailty, low levels of physical activity and poor physical functioning. Researchers also found that social frailty was associated with dementia, memory decline, depression and cognitive impairment. Having experienced a negative or traumatic event was also associated with social frailty. Additionally, social frailty was associated with physical functioning, cognition and depression and predicts mortality; they emphasize that interventions aimed at preventing or delaying social frailty are warranted.

In a cross-sectional study carried out by Mulasso et al. [15] the association between frailty and emotional experience was studied in a sample of Italian

community-dwelling older adults. Participants consisted of 104 older adults (age  $76 \pm 8$  years; 59.6% women) living in Italy. Frailty and emotion perception were measured with appropriate and valid tools. The Mini-Mental State Examination was used as a screening tool for cognitive functions (people with a score  $\leq 20$  points were excluded). The researchers stated that frailty increases individual vulnerability to external stressors and involves high risk for adverse geriatric outcomes [15]; findings demonstrate that emotion perception may influence frailty, which is really relevant for the evaluation and prevention of frailty in older adults.

A theoretical study based on research studies that equate the role of nutrition and nutrients in cognitive and functional decline was developed by Gomez-Gomez and Sapico [23]. They state that one of the most important factors to consider in the development of cognitive deterioration is oxidative stress. Consequently, they added that increasing antioxidants in the diet may be one of the therapeutic strategies in the management of these patients.

Some studies were analysed, mainly those that showed the effectiveness of antioxidants in the adjustment of oxidative stress, given their function as free radical scavengers, or factors that potentiate the antioxidant effect. Anyway, the studies emphasized that the inappropriate use of antioxidants could have side effects and become toxic at high doses. Given the multiplicity and some divergence in the results, additional studies are required as well as clinical trials to increase the clinical effectiveness [23].

Several studies were analysed, namely, those that have shown the effectiveness of antioxidants in the adjustment of oxidative stress, either by their function as free radical scavengers or potentiating the antioxidant effect. Studies showed that the inappropriate use of antioxidants could have side effects and toxicity at high doses. However, it was indicated that additional studies are required as well as clinical trials to increase the clinical effectiveness [23].

Abreu et al. [4] examined the healthcare needs of community-dwelling older people, trying to understand the relationship between frailty, functional dependence and healthcare needs among community-dwelling people with moderate to severe dementia. A sample of 83 participants was recruited. The Edmonton Frail Scale was used to evaluate frailty, in addition to tools that were chosen to collect data on other variables. A set of 26 healthcare needs was defined to support the assessment. There was a significant association between “severe frailty” and “severe dementia” and “fully dependent” and “severely or fully dependent in the activities of daily living”. The most prevalent healthcare needs in the sample were food preparation, medication/taking pills, looking after their home, toilet use, sensory problems, communication/interaction, bladder, bowels, eating and drinking, memory, sleeping and fall prevention. In particular, the study shows a set of needs that are present simultaneously in both frailty and dementia stages, according to their severity. They found in the study that 16.7% of people with moderate dementia were also diagnosed with severe frailty. Concerning the needs assessment, the authors state that the concept of “severe dementia” is clearly a limiter in the matter of frailty. As an alternative, they suggest the expression of “advanced dementia”, encompassing people with severe dementia and people with moderate dementia but who also have severe frailty.

## **5. Evaluation and measures of frailty**

Usually, scales assess some domains of frailty in old people (cognition, general health status, functional independence, social support, medication usage, nutrition, mood, continence and functional performance). These tools are important on clinical point of view, for research and decision-making. Several tools that evaluate



functionality and cognition also evaluate several dimensions that we are traditionally including in frailty.

Armstrong et al. [17] indicate, in the scope of their study, three conceptually different approaches to the measurement of frailty: (1) Changes in Health, End-Stage Disease and Signs and Symptoms (CHESS) scale, (2) Edmonton Frail Scale (EFS), (3) the frailty index (FI) and the Tilburg Frailty Indicator (TFI).

The CHESS scale is a tool that uses information from the person's clinical assessment, which is used to calculate the person's level of decline. The tool was developed using statistical methods, based on the items available in the inter-RAI instruments. It is not a tool for objectively assessing frailty, but it allows assessing the "instability" of health status, which is also a predictor of mortality [17]. The scores ranging from 0 (meaning no instability) to 5 (for the highest level of instability) have been demonstrated to be a strong predictor of mortality ( $P < 0.0001$ ) in continuing care patients [24].

The EFS is a brief multidimensional clinical measure, widely used and designed to use in both inpatient and outpatient settings [25]. The scale assesses nine domains of frailty in old people (cognition, general health status, functional independence, social support, medication usage, nutrition, mood, continence and functional performance) [25]. Total score can vary from 0 to 17. The participants were classified into categories, and a higher score represents a higher degree of frailty. Severe frail and non-frail participants were defined according of the EFS score from not frail (0–5), vulnerable (6–7), mild frailty (8–9), moderate frailty (10–11) and severe frailty (12–17). The EFS is a measure of frailty compared to the clinical impression of specialists after their more comprehensive assessment. A larger part of the assessment tools is focused primarily on determining the person's level of functioning in terms of managing activities of daily living and instrumental activities of daily living. In post-operative older adults, high scores on the EFS have been shown to be associated with increased complications and a lower chance of being discharged home after surgery [17].

The FI was developed by Rockwood and Mitnitski based on an idea of "accumulation of deficits" [17]. The FI is based on the view that frailty is a non-specific multifactorial state, best characterized by the quantity, rather than the quality, of the health deficits that the person accumulates during the course of life [26]. The FI is thus calculated as the proportion of potential deficits present in the person and can be calculated from the information present in most previous systems of clinical data (databases) [17].

The TFI is a tool widely used to assess 3 frailty domains and their 15 components. It is a user-friendly questionnaire and has good psychometric properties assessed in the initial validation process, constituting a good strategy for multidimensional assessment of frailty in community settings [27]. The instrument consists of two parts. Part A includes life-course determinants of frailty (sex, age and marital status), and part B assesses 15 components of frailty. The score on total frailty has a range of 0–15; people with a score  $\geq 5$  are considered frail; for physical, psychological and social frailty, the score ranges are 0–8, 0–4 and 0–3, respectively [28].

Studies carried out in different countries have demonstrated that these tools have in general good psychometric properties and are reliable and valid instruments for assessing frailty in community-dwelling older people [4, 17, 24–27, 29, 30].

## **6. Healthcare interventions in older frailty persons**

Frailty's assessment is inseparable from an objective and competent evaluation of healthcare needs. Frailty is a multidimensional concept and can be defined as a dynamic state that affects an individual with declines in one or more domains,

such as physical, cognitive, social, attention or senses. The assessment of frailty is of limited interest if healthcare professionals do not invest in assessing the needs of frailty people in healthcare. This assessment must be multidimensional, multifactorial, longitudinal and comprehensive, covering all activities of life.

There are many debates on what are health needs assessment and problem identification. What is important to note is that care needs assessment is a systematic and sequential process, conducted by a care professional, which begins with the assessment of dependency focus, accounts for the presence and efficacy of current help, recognizes perceived need and finally determines the type of intervention needed to meet those needs [31].

It has been recognized that needs in the elderly should be patient-centred; holistic; analysed on by dependent people, caregivers and professionals; communicated to other professionals; and met in order to achieve better coordination between leading disciplines; needs assessment enhances the patient and carers experience and leads to more accurate information, but the level of reassessment by other professionals and the incidence of service duplication should also be reduced [31].

Care needs assessment has to promote an objective, competent evaluation of the self-care deficits. A self-care deficit is an inability to perform certain daily activities dependent on health and well-being. Common activities of daily living are the following: eating, bathing, getting dressed, toileting, transferring and continence. Self-care deficits can arise from physical or mental impairments. In elderly people, some of these problems accumulate and comorbidities appear. Health professionals play an important role when it comes to addressing self-care deficits through assessment and intervention. For assessment, evaluation of needs and identification of focuses of attention are necessary. Intervention can include, but is not limited to, helping patients to manage signs and symptoms, adhere to the therapeutic regime, adjust to deficits and strive to preserve, as far as possible, their self-care capacity.

With the ageing of the population and increased longevity, the need to provide palliative care is emphasized. However, this increased need is not usually accompanied by the availability of beds, which requires the use of indicators to manage the availability of palliative care provision. When to begin palliative care is a troublesome question for patients, families and healthcare providers [32]. Severe frailty is a relevant marker, along with functional dependence, cognitive impairment, symptom distress and family support for beginning palliative care. Frailty, independent of specific diseases, can be associated with a limited life expectancy and therefore is an important indication for palliative care [32]. Frailty is an essential model for palliative care in older adults as optimal medical treatment for the frail patient typically includes preventive, life-prolonging, rehabilitative and palliative measures in varying proportion and intensity based on the individual patient's needs and preferences [33].

## **7. Conclusion**

Frailty elderly usually have dependence on self-care and need of support from others. Elderly does not mean frailty, but the ageing process led to frailty, which means that there are changes that reflect ageing-related alterations and involve intrinsic and extrinsic factors which are typical of ageing [4]. Usually, scales assess some domains of frailty in old people (cognition, general health status, functional independence, social support, medication usage, nutrition, mood, continence and functional performance). The occurrence of frailty is mainly a state of vulnerability resulting from comorbidities and the overall decline in organ functions. The progression to later stages of frailty often signals a loss of autonomy, dependence and reduction in physical and cognitive function.

Frailty is commonly positively related with caregiver burden and associated with higher levels of depression on the caregiver. A lack of understanding about frailty has been identified as a barrier to providing optimal care to elderly people. Self-care deficit theories suggest people are better able to recover when they maintain some independence over their own self-care. The evaluation of frailty is closely linked to the identification of dependencies in self-care. The use of frailty and self-care dependence assessment helps to determine the focus of attention, to respect vulnerability, to limit dependence as much as possible and to provide quality, safety and competent care.

IntechOpen

IntechOpen

### **Author details**

Wilson Abreu\* and Margarida Abreu  
ESEP-CINTESIS (University of Porto), Porto, Portugal

\*Address all correspondence to: wjabreu@esenf.pt

### **IntechOpen**

---

© 2020 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

## References

- [1] Fried L, Walston J. Frailty and failure to thrive. In: Hazzard WR et al, editors. *Principles of Geriatric Medicine and Gerontology*. Vol. 4. New York: McGraw Hill; 1998. pp. 1387-1402
- [2] Andrade A, Fernandes MG, Nóbrega MM, Garcia T, Costa K. Análise do conceito fragilidade em idosos. *Texto Contexto Enferm, Florianópolis*. 2012;21(4):748-756
- [3] Rodríguez-Mañás L, Féart C, Mann G, Viña J, Chatterji S, Chodzko-Zajko W, et al. Searching for an operational definition of frailty: A delphi method based consensus statement: The frailty operative definition-consensus conference project. *Journal of Gerontology Series A: Biological Sciences and Medical Sciences*. 2013;68(1):62-67
- [4] Abreu W, Tolson D, Jackson GA, Staines H, Costa N. The relationship between frailty, functional dependence, and healthcare needs among community-dwelling people with moderate to severe dementia. *Health & Social Care in the Community*. 2019;11:3-18. DOI: 10.1111/hsc.12678
- [5] Theou O, Cann L, Blodgett J, Wallace L, Brothers T, Rockwood K. Modifications to the frailty phenotype criteria: Systematic review of the current literature and investigation of 262 frailty phenotypes in the survey of health, ageing, and retirement in Europe. *Ageing Research Reviews*. 2015;21:78-94
- [6] Chong MS, Tay L, Chan M, Lim WS, Ye R, Wong WC, et al. Stage-specific relationship between frailty and cognitive impairment. *Journal of Frailty & Aging*. 2014;3(2):113-119
- [7] Rockwood K, Howlett S, MacKnight C, Beattie B, Bergman H, Hebert R, et al. Prevalence, attributes, and outcomes of fitness and frailty in community-dwelling older adults: Report from the Canadian study of health and aging. *Journal of Gerontology Series A: Biological Sciences and Medical Sciences*. 2004;59:1310-1317
- [8] Panza F, Solfrizzi V, Giannini M, Seripa D, Pilotto A, Logroscino G. Nutrition, frailty, and Alzheimer's disease. *Frontiers in Aging Neuroscience*. 2014;6:221
- [9] Clegg A, Young J, Ili S, Rikkert M, Rockwood K. Frailty in elderly people. *Lancet*. 2013;381:752-762
- [10] Fried L, Tangen C, Walston J, Newman A, Hirsch C, Gottdiener J, et al. Frailty in older adults: evidence for a phenotype. *Journal of Gerontology Series A: Biological Sciences and Medical Sciences*. 2001;56(3):146-154
- [11] Morley J. Frailty and sarcopenia: The new geriatric giants. *Revista de Investigación Clínica*. 2016;68:59-67
- [12] Robertson D, Savva G, Kenny R. Frailty and cognitive impairment—A review of the evidence and causal mechanisms. *Ageing Research Reviews*. 2013;12:840-851
- [13] Canevelli M, Cesari M, van Kan G. Frailty and cognitive decline: How do they relate? *Current Opinion in Clinical Nutrition and Metabolic Care*. 2015;18(1):43-50
- [14] Delrieu J, Andrieu S, Pahor M, Cantet C, Cesari M, Ousset P, et al. Neuropsychological profile of “Cognitive Frailty” subjects in MAPT study. *Journal of Prevention of Alzheimer's Disease*. 2016;3(3):51-159. DOI: 10.14283/jpad.2016.94
- [15] Mulasso A, Argioli L, Roppolo M, Azucar D, Rabaglietti E. Emotion

experience and frailty in a sample of Italian community-dwelling older adults. *Clinical Interventions in Aging*. 2017;12:2017-2024. DOI: 10.2147/CIA.S147121

[16] Clark L, Watson D. Diurnal variation in mood: Interaction with daily events and personality. In: Meeting of the American Psychological Association. Washington, DC; 1986

[17] Armstrong J, Mitnitski A, Andrew M, Launer L, White L, Rockwood K. Cumulative impact of health deficits, social vulnerabilities, and protective factors on cognitive dynamics in late life: A multistate modelling approach. *Alzheimer's Research & Therapy*. 2015;7:38. DOI: 10.1186/s13195-015-0120-7

[18] Dudzinska-Griszek J, Szuster K, Szewieczek J. Grip strength as a frailty diagnostic component in geriatric inpatients. *Clinical Interventions in Aging*. 2017;12:1151-1157. DOI: 10.2147/CIA.S140192

[19] Anzaldi L, Davison A, Boyd C, Leff B, Kharrazi H. Comparing clinician descriptions of frailty and geriatric syndromes using electronic health records: A retrospective cohort study. *BMC Geriatrics*. 2017;17(1):248

[20] Shimada H, Makizako H, Tsutsumimoto K, Doi T, Lee S, Suzuki T. Cognitive frailty and incidence of dementia in older persons. *Journal of Prevention of Alzheimer's Disease*. 2018;5(1):42-48

[21] Cuenca L, Lopez S, Martin L, Jaimes N, Villamayor I, Artigas M, et al. Frailty in patients over 65 years of age admitted to Intensive Care Units (FRAIL-ICU). *Medicina Intensiva*. 2019;43(7):395-401

[22] Ma L, Sun F, Tang Z. Social frailty is associated with physical functioning, cognition, and depression, and predicts

mortality. *Journal of Nutrition, Health and Aging*. 2018;22(8):989-995

[23] Gomez-Gomez M, Zapico S. Frailty, cognitive decline, neurodegenerative diseases and nutrition interventions. *International Journal of Molecular Sciences*. 2019;20(11):1-18

[24] Hirdes J, Frijters D, Teare G. The MDS-CHESS scale: A new measure to predict mortality in institutionalized older people. *Journal of the American Geriatrics Society*. 2003;51:96-100

[25] Rolfson D, Majumdar S, Tsuyuki R, Tahir A, Rockwood K. Validity and reliability of the Edmonton Frail Scale. *Age Ageing*. 2006;35:526-529

[26] Rockwood K, Mitnitski A. Frailty in relation to the accumulation of deficits. *Journal of Gerontology. Series A, Biological Sciences and Medical Sciences*. 2007;62A:722-727

[27] Gobbens R, Schols J, van Assen MA. Exploring the efficiency of the Tilburg Frailty Indicator: A review. *Clinical Interventions in Aging*. 2017;12:1739-1752. DOI: 10.2147/cia.s130686

[28] Gobbens RJ, van Assen MA, Luijkx KG, Schols JM. The predictive validity of the Tilburg Frailty Indicator: Disability, health care utilization, and quality of life in a population at risk. *Gerontologist*. 2012;52(5):619-631. DOI: 10.1093/geront/gnr135

[29] Santiago L, Luz L, Mattos IE, Goddens R. Adaptação transcultural do instrumento Tilburg Frailty Indicator (TFI) para a população brasileira. *Cadernos de Saúde Pública*. 2012;28(9):1795-1801. DOI: 10.1590/S0102-311X2012000900018

[30] Uchmanowicz I, Jankowska-Polanska B, Uchmanowicz B, Kowalczyk K, Gobbens RJ. Validity and reliability of the Polish version of the

Tilburg Frailty Indicator (TFI). *Journal of Frailty & Aging*. 2016;5(1):27-32.  
DOI: 10.14283/jfa.2015.66

[31] Meaney AM, Croke M, Kirby M.  
Needs assessment in dementia.  
*International Journal of Geriatric Psychiatry*. 2005;20(4):322-329

[32] Raudonis B, Daniel R. Frailty: An indication for palliative care. *Geriatric Nursing*. 2010;31(5):379-384

[33] Morrison R, Meir D, editors.  
*Geriatric Palliative Care*. New York: Oxford University Press; 2003

IntechOpen