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Critical reflections on the blind sides of frailty in later life
- ACCEPTED FOR PUBLICATION -

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Abstract

Since the 1970's, frailty emerged as a major theme and has become one of the most researched topics in aging studies. However, throughout the years, the concept 'frailty' became susceptible to different interpretations and has been approached by different synonyms, which resulted in a confusing picture. Based on a narrative literature review, this theoretical paper not only attempts to describe these different views on frailty, but by criticizing the dominance of some of these views, it also aspires to move the research and policy agenda on frailty forward. This paper is part of the D-SCOPE project in Belgium, and critically reflects on the blind sides of the biomedical domination of frailty and discusses three main themes: 1) frailty as a multidimensional and multilevel concept; 2) positive perspectives on frailty in later life; and 3) the suggestion of moving from a merely deficit-based frailty approach towards the concept of frailty-balance. At the theoretical level, conceptualizing frailty is not simply an exercise in semantics, but altering the theoretical definition of frailty can have wide-ranging implications, not only for the way frailty prevalence is measured and handled, but also for public or personal opinions on frailty in older people, for care and support practices, and for the scope of legislation. Therefore, the final section of the paper presents three building blocks for future research and policy-making: 1) adopting a multidimensional, multilevel, dynamic and positive view on frailty; 2) moving from dependency to interdependency; and 3) giving voice to (the resilience of) frail older people.

Key-words

Frailty, older people, theory, perceptions of aging

Introduction

Frailty emerged since the 1970's as a major theme and has become one of the most researched topics in gerontology and geriatrics. In 2017 already 42 scoping or systematic literature reviews and meta-analyses on frailty were available in Web of Science. Nevertheless, or maybe because of this major interest, frailty as a concept has become problematic both as a research topic and as a public policy issue (Gwyther et al., 2018). The concept 'frailty' is susceptible to different interpretations and is approached by different synonyms. Markle-Reid & Browne (2003, p.60) provided an overview of these synonyms, antonyms and definitions of frailty in the literature, which vary from 'failure to thrive' to 'functional disability', from 'fragility' to 'feebleness' or 'general vulnerability' (Markle-Reid & Browne, 2003, p.60). This results in a confusing picture which is problematic. A clear understanding of the concept of frailty is not solely of importance within academia, but also has explicit implications for the way frailty prevalence is measured and handled in daily care and support practices, and for the scope of legislation (Grenier, 2007; Sternberg et al., 2011).

When discussing the meaning of frailty, Hertogh (2013, p.95) points towards the difference between words and concepts, indicating that *"in very different theoretical contexts the same word can be used to denote different concepts."* This notion of frailty reminds one of an old Indian tale of six blind men and an elephant in some ways. Different versions of this story exist, but the narrative tells about a group of blind men touching an elephant to learn what it is like. Each man touches a different part of the elephant (e.g. the sharp tusk, the massive side or the thin trunk), which subsequently leads to six different conclusions about what the elephant is. They compare their conclusions on what they felt, and learn they are in absolute disagreement. The story is used to indicate that reality may be viewed differently depending upon one's perspective: by touching only one part of the elephant, the men fail to see the whole picture. We compare this story to the complex concept of frailty since there are multiple understandings (i.e. concepts) of what it (i.e. the word) means (Tocchi, 2015).

In this 'frailty-confusion', mainly the often-unilateral conceptualization of frailty has been criticized, urging for a broader integrative perspective (e.g. Nicholson, Gordon, & Tinker, 2016), or even to denounce the word (e.g. Grenier, Lloyd, & Philipson, 2017). The latter is something we will not plea for, as we believe the endeavor remains the same: clearly elucidating what you mean with the term, while denouncing which interpretations you do not support. This paper not only attempts to describe the different views on frailty, but by criticizing the dominance of some of these 'blind men', it aspires to move the research and policy agenda on frailty forward. In doing so, this paper aims to discuss 3 main themes: 1) frailty as a multidimensional and

multilevel concept; 2) positive perspectives on frailty in later life; and 3) moving from a merely deficit-based approach to frailty towards the concept of frailty-balance. At the theoretical level, conceptualizing frailty is not simply an exercise in semantics, but altering the theoretical definition of frailty can have wide-ranging practical and political implications. Therefore, the final section of the paper presents three building blocks for future research and policy-making focusing on: 1) adopting a multidimensional, multilevel, dynamic and positive view on frailty; 2) moving from thinking in terms of dependency to interdependency; and 3) giving voice to (the resilience of) frail older people.

This paper is part of the D-SCOPE project, which stands for “Detection, Support and Care of Older people: Prevention and Empowerment”. From January 2015 until December 2018, 21 researchers from the Vrije Universiteit Brussel, the University of Antwerp, University College Ghent, the Catholic University of Leuven (Belgium) and Maastricht University (the Netherlands) collaborated on this “Strategic Basic Research”. Within this type of research, results have to serve prospective social applications in the matter of new products, processes or services. The project started from the observation that frailty in older adults is often not detected on time. Adequate prevention of frailty in older adults would benefit the older person, his environment and be more cost-effective for society. Existing initiatives that proactively detect frailty in older adults however insufficiently address the assets and balancing factors of these people. The main research aims of the D-SCOPE consortium were (1) to identify strategies for proactive detection community-dwelling older adults at risk of frailty (e.g. Dury et al., 2016); (2) to guide them towards appropriate support and/or care with a strong focus on empowerment and mastery (e.g. Lambotte et al., 2018) and (3) to develop a frailty balance instrument (e.g. van der Vorst et al., 2017). The current paper is the result of 4 years conceptual and theoretical discussions in this multi-disciplinary consortium.

Frailty: a multidimensional and multilevel concept

One of the first definitions of frailty was provided in 1978 by the Federal Council on Aging in the United States (FCA, 1978). The FCA used the term ‘frail older people’ to describe a specific segment of the older population as *‘persons, usually but not always, over the age of 75, who because of an accumulation of various continuing problems often require one or several supportive services in order to cope with daily life’*. Conversely with the broadness of this definition, in the following years frailty was mainly associated with disability, the presence of chronic illness, or dependency (Hogan, MacKnight, & Bergman, 2003; Markle-Reid & Browne, 2003). Markle-Reid and Browne (2003, p.61) conducted a literature review on the different conceptual models existing on frailty in relation to older people. They concluded that the

literature on frailty is dominated by *“instrumental definitions and conceptual models that reflect a postpositivist, predominantly biomedical perspective of frailty.”* This biomedical model considers frailty (and broader aging in general) as a problem of the individual that is directly caused by a disease, an injury, or another health condition, and requires support from medical care services (e.g. Buckinx et al., 2015; Fried et al., 2001; Lally & Crome, 2007).

In order to move away from a disease-based approach towards a health-based integrative approach (Bergman et al., 2007), there is a call to integrate frailty within a wider conceptual framework (Nicholson et al., 2016) and operationalize frailty as a multidimensional concept exploring social, environmental and behavioral factors as well (Bergman et al., 2007; Markle-Reid & Browne, 2003). When asking older people what frailty means, they answer in much broader terms compared to the narrow biomedical definitions of frailty. When talking about frailty, older people mention a wide range of topics, ranging from poor health and having walking difficulties, to feeling down and being anxious, and to having few social contacts and not being able to do the things one likes to do (Dury et al., 2018). This is in line with recent studies in which multidimensional frailty is operationalized as the complex interplay between physical, psychological, social, cognitive and environmental factors (Armstrong, Stolee, Hirdes, & Poss, 2010; De Witte et al., 2013a; Gobbens, Luijckx, Wijnen-Sponselee, & Schols, 2010; Hogan et al., 2003; Markle-Reid & Browne, 2003; Tocchi, 2015; Walston et al., 2006).

In December 2012, a consensus conference was convened consisting of delegates from six major international (e.g. International Association of Gerontology and Geriatrics), European (e.g. European Union Geriatric Medicine Society), and US societies (e.g. American Medical Directors Association and American Federation for Aging Research) as well as seven frailty experts. During this conference it became apparent that *“a major reason that prior attempts at a consensus around frailty were not successful is that they did not resolve distinctions between broad definitions of frailty and more specific subsets.”* (Morley, Vellas, & van Kan, p.395). They agreed upon a definition of physical frailty, being a subset of broader frailty. Physical frailty was defined as *“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.”* (Morley et al., 2013, p. 393).

Since the turn of the century, a number of researchers (e.g. De Witte et al., 2013a, 2013b; Gobbens et al. 2010; Walston et al., 2006) recommended going beyond the physical aspects of frailty, and to include psychological, social, and environmental frailty. Addressing frailty exclusively on physical components jeopardizes the attention for the individual as a whole, leading to fragmentation of care (Clarfield, Bergman, & Kane, 2001). Psychological frailty includes depressive symptomatology and negative affect, anxiety, or sadness (Bravell et al.,

2011). Social frailty can be defined as “a continuum of being at risk of losing, or having lost, resources that are important for fulfilling one or more basic social needs during the life span.” (Bunt, Steverink, Olthof, van der Schans, & Hobbelen 2017, p.323). It can encompass a lack of social support, the absence of emotionally rewarding social contacts or loneliness (Steverink, Slaets, & Schuurmans, 2001). Environmental frailty refers to being frail in terms of poor-quality housing and deprived living environments (De Witte et al., 2013b). Finally, as older people themselves described a decline in cognitive functions when explaining their understanding of frailty, cognitive frailty gained attention as a frailty domain. Although sometimes operationalized as being part of psychological frailty (Gobbens et al., 2010), or as a co-existing with physical frailty (e.g. Kelaiditi et al., 2013), some authors argue to view this as a distinct dimension of frailty (Buchman & Bennett, 2013; De Roeck et al., 2018).

The best-known operationalization of unidimensional frailty is the Physical Frailty Phenotype by Fried et al. (2001) (i.e. Cardiovascular Health Study Index (CHS index)). According to this measure, frailty should be defined by five features: unintentional weight loss, self-reported exhaustion, muscle weakness, slow walking speed and low physical activity (presence of 3 or more of these features = frailty, 1 or 2 = pre-frailty, 0 = no frailty). A well-known instrument to measure multidimensional frailty is the frailty Index, counting the deficits in health (e.g. any clinical symptom, sign, disease, disability, or laboratory, imaging or electrodiagnostic abnormality (Lacas & Rockwood, 2012)). But also, newer instruments are more and more widely used such as the Tilburg Frailty Indicator (TFI, containing 3 dimensions of frailty: physical, psychological and social) (Gobbens et al., 2010) or the Comprehensive Frailty Assessment Instrument-plus (CFAI-plus, containing 5 dimensions of frailty: physical, social, psychological, environmental, cognitive) (De Roeck et al., 2018). Roppolo et al. (2015) investigated the difference between a unidimensional (i.e. biomedical, with the CHS index) - and a multidimensional measure of frailty (i.e. physical – social – psychological, with the TFI). Their paper ascertained that the two instruments, based on different conceptualizations detected different individuals as frail. Individuals categorized as frail by both measures were different from each other. Based on their results, they propose the use of a multidimensional scale because it would guarantee a better identification of individuals at risk for negative (health) outcomes (Roppolo et al., 2015).

In addition to the need to integrate different dimensions of frailty, Markle-Reid and Browne (2013) discuss the multileveled nature of frailty, or in other words: the micro and macro theorizing perspectives. A micro level perspective implies that frailty originates from, or exists within the individual; i.e. an older adult is considered frail on the basis of individual impairments, deprivation or deficits. Although frailty is broadened from a biomedical (e.g. Fried et al., 2001)

to a more bio-psycho-social model (e.g. Gobbens et al., 2010; De Witte et al., 2013), a micro-perspective still focuses on the individual aspect of aging, and thus attributes bio-psycho-social deprivations to the individual (Estes, Biggs, & Phillipson, 2003). This micro-perspective states that problems that arise when aging, derive from individual problems in personal adjustment rather than from structural inequalities created based on socio-economic status, gender or race (Achenbaum, 2009; Estes et al., 2003). Dillaway and Byrnes (2009) criticize this micro perspective as individuals are not always able to overcome or adjust to personal barriers themselves. Such a micro-perspective ignores the inequalities among the ageing population, and the '*ways in which society's structural and social forces advance opportunities for some and limit them for others*' (Martinson & Minkler 2006: 321). Also Hagestad and Dannefer (2001) criticize the predominant focus on the micro-level and use the term of 'microfication' to denote a trend in ageing studies which concentrates on psycho-social characteristics of older adults in micro-interactions, thereby neglecting the macro-level.

Such a macro level perspective explores the impact of wider social structures, such as state, education, media and economy, on aging and pays attention to for example sociological and critical perspectives, feminist theories or political economy (Bengtson et al., 2009; Estes et al., 2003). Viewed from the macro perspective, frailty is not the attribute of the individual. Instead it is created by social and structural conditions. People are not frail solely by personal characteristic but are also fragilized by society. Older people face discrimination and exclusion through social, institutional, and economic barriers, which renders them frail.

Another important level, which remains under researched in frailty literature, is the meso-level, which attempts to explain individual outcomes as a consequence of organizational dynamics such as within the family, community, neighborhoods, institutions or city infrastructure (Dannefer & Kelley-Moore, 2009). Depending on its characteristics, neighborhoods and communities can serve as buffers or exacerbators for physical behavior (Van Cauwenberg et al., 2014), depression (Barnett, Zhang, Johnston, & Cerin, 2018) or frailty (Duppen et al., 2017). Although each level has its own merits, there is a clear need to bring micro-, meso- and macro level perspectives on frailty together. This may be a promising conceptual avenue to understand why some frail older persons experience a good wellbeing while others feel frail and lack wellbeing.

Need for recognition and positive perspectives on frailty in later life

The negative perception of the word of frailty is not only linked to the aforementioned dominance of the unidimensional (i.e. physical frailty), or its unilevel (i.e. micro) perspective on frailty; it is also a reaction to the negative discourse on aging and older people in general. The social induction of frailty itself runs parallel with the 'paradigm of decline', the so-called deficit model, which dominates the narrative on aging, often as a result of the pervasiveness of ageism that drives our society (Gullette, 1997, 2011). Within this view, population aging is conceived as a growing "problem" and older people are regularly considered as a social and economic burden to society. Additionally, older people are often confronted with negative stereotyping (e.g. by a focus on physical and mental decline, dependency, unproductivity, or passivity). Several authors also argue that the notion of frailty has the potential to stereotype older people (Becker, 1994; Kaufman, 1994): *"Although unintended, the emphasis on successful ageing, combined with historical and medicalised trajectories of impairment, have crystallised the 'frailties' of physical and cognitive impairment into an 'unsuccessful' or 'failed' late life."* (Grenier et al., 2017: 319). Moreover, it is known that stereotyping can have negative consequences, as labelling people as frail, can cause that people are going to feel frail and behave accordingly (Warmoth et al., 2015).

Research on frailty has mainly focused on its associations with adverse (health) outcomes (e.g. Vermeiren et al., 2016; Lahousse et al., 2014), such as an increased risk of pre-mature mortality, hospitalization, institutionalization, falls, and comorbidities (Kelaiditi et al., 2015, Mosquera et al., 2016). From the 42 aforementioned literature reviews that were available in Web of Science in 2017, 13 papers concerned reviews on negative outcomes such as cardiovascular disease (Verma, O'Laughlin, Bunker, Peterson, & Frishman, 2017), future fracture (Chen, Chang, & Lin, 2017), depression (Soysal et al., 2017) or heart failure (Denfeld et al., 2017). No titles concerned reviews on positive outcomes such as wellbeing or quality of life. While this is of course a simple inquiry, it remains quite indicative.

We argue that this shortage of articles does not necessarily indicate a lack of positive outcomes. In many cases, these are simply overlooked: 'being a blind side of the elephant which is often ignored'. Several studies discovered that older people can still have a satisfying life, despite the deficits they experience (Andreasen, Lund, Aadahl, Gobbens, & Sorensen, 2015). For example, some frail older people experiencing physical and/or social changes report good levels of psychological well-being or quality of life (Lloyd et al., 2016). In studies conducted in Belgium (van der Vorst et al., 2017) and the Netherlands (Ament, de Vugt, Verhey, & Kempen, 2014) it was shown that about half of their frail participants, still reported a good to excellent quality of life. Nonetheless, the focus in most studies is on explaining why frail older people report lower levels of wellbeing, rather than on identifying factors that

contribute to wellbeing, despite being frail. Some frail people may compensate for underlying functional decrements in order to maintain the same level of performance in real life. The use of external and internal compensatory strategies may help to minimize the impact of frailty and thereby preserve adequate physical, psychological and social functioning.

The widely-spread idea of frailty being an undesirable state has led to situations of older people being stigmatized for their frailty and increased care needs (Brown, Renwick, & Raphael, 1995). In response, Grenier et al. (2017: 327) make an appeal to “*normalise late life and frailties that occur over time,*” and to acknowledge the precariousness, vulnerabilities and cumulative inequalities people experience throughout the entire life course. In research, policy and society “*the moments of pleasure and joy that can exist in deep old age*” should also be recognized (Grenier et al., 2017: 327). In the same line of reasoning, Baltes and Smith (2003) propose the need to recognize the two faces of human aging: the losses and the gains. Gains may also be seen in the context of loss, as older people may unfold unexpected competencies, create new social relationships or develop innovative strategies to overcome frailty and exclusion (Smetcoren et al., 2018; Van Regenmortel, 2017). However, this ‘gain perspective’ is often disregarded in the general reflection on frailty. Conclusively, in our view, the main question for research is not what are the negative effects of frailty, but rather what makes frail older people experience wellbeing and a good quality of life? Which gains can balance the losses? We should start thinking more positively or actively about ‘an older person who lives with frailty’ and how their wellbeing can be protected and promoted.

From frailty towards frailty-balance: a dynamic perspective

As outlined above, most of the frailty perspectives emerged from a negative and stereotypical view on aging (Kaufman, 1994; Markle-Reid & Brown, 2003). By using the deficit-based concept of frailty, most older persons are associated with lack of hope (Brown, 2002) and loss of or declining abilities. Indeed, to date, the debate on frailty in older people has mainly focused on the registration of deficits. Nonetheless, Lacas and Rockwood (2012) stress that frailty is changeable and can be both increasing and decreasing. Their vision differs from the dominant focus in the way that a state of frailty can be resolved or diminished if sufficient assets are available. This idea of balancing assets goes back to Rockwood, Fox, Stolee, Robertson, and Beattie (1994) who built upon the ideas of Brocklehurst (1985) of a dynamic model of frailty, in which the balance between assets (e.g. resources, the availability of (in)formal caregivers) and deficits (e.g. frailty, burden, or dependency) determine whether a person can age (well) in place.

In addition to the registration of deficits and dependency, this “balance thinking” calls for a need to register assets or strengths of older people in managing their everyday life (Nicholson et al., 2016). These strengths could for example include functional capacity and positive attitudes towards health (Rockwood et al., 1994), the availability of family caregivers (Holroyd-Leduc et al., 2016), a supportive social environment (Duppen et al., 2017), or personality and resilience (Janssen, Abma, & Van Regenmortel, 2011). Two individuals with the same ‘objective’ level of frailty, for instance, can be very different in the kind of support they need because their assets, and consequently their ‘balance’, is different (de Blok, Meijboom, Luijkx, & Schols, 2009). Already in 1993 Sipsma called attention for a “gerodynamic model.” Intervening at the balance between losses and deficits on one side and support and autonomy on the other side seems a more useful approach than purely intervening on frailty (Sipsma, 1993).

The frailty balance can be negative when the reserve capacity of an individual falls below the threshold needed to cope successfully with the challenges faced when aging (Grundy, 2006). Using the concept of ‘balance’ implies a dynamic vision on frailty, indicating the potential of restoring the state of ‘imbalance’. Boers and Jentoft (2015: 429) literally referred in their definition of frailty as the weakening of health or the weakened... *“resilience or capacity to cope, and to maintain and restore one’s integrity, equilibrium, and sense of wellbeing.”* Nicholson et al. (2013: 1172) even argue that frailty should be understood in terms of re-establishing stability, as the *“potential capacity – a state of imbalance in which people experience accumulated losses whilst working to sustain and perhaps create new connections.”* This requires some sort of ‘competence-thinking’: the historical focus on what older people can no longer do (i.e. their deficits) should be replaced by an emphasis on what they can still do (i.e. their assets and competences). This is also in accordance with the redefinition of health by the WHO (Beard et al., 2016), from a static formulation of complete wellbeing towards a more dynamic concept that centers on the notion of functional ability. Healthy aging stresses the combination of the intrinsic capacity of the individual, relevant environmental characteristics, and the interactions between the individual and these characteristics.

Hence, there is a need for the inventory of - what we call - possible “balancing factors,” i.e. intrinsic and extrinsic resources to meet particular psychological, social, physical, environmental and/or cognitive frailty challenges. First, in terms of individual resources qualitative interviews with 121 (potentially) frail older people in Belgium showed that they could use a diverse range of coping strategies and were resilient in dealing with frailty and changing life events (Dury et al., 2018). Frail older people illuminated that balancing factors at the individual level, such as accepting the situation or remaining positive, are very important in

how they experienced and perceived their own frailty, and in whether or not they still experienced a good quality of life. Second, regarding balancing factors at an environmental level, a connection can be made with the 'Ecological Press-Competence model' of Lawton and Nahemow (1973). Within this model, also known as the 'environmental docility hypothesis' (Lawton & Simon, 1968), 'loss of competence' can be understood as 'sensory loss, loss in physical mobility, or cognitive decline' and 'environmental press' refers to thresholds in the physical structure of the environment such as bad neighbourhood conditions, underdeveloped public transport (Peace, Dittman-Kohli, Westerhof, & Bond, 2007, p.212). The general hypothesis suggests that a decreased level of competence together with a high environmental press will have a negative impact on behavior (e.g. basic activities or leisure involvement) and wellbeing of the older person (Peace et al., 2007). Put the other way around, it could also indicate that less environmental presses could balance a decreased level of competence. Research on the protective or supportive role of the environment has put a lot of focus on examining the role of the physical environment (such as introducing home or neighbourhood adaptations), while the social environment has remained somewhat under researched (Buffel et al., 2012; Smetcoren et al., 2018; Steels, 2015). The social environment is a broad concept that includes social networks, social support, social participation, neighborhood characteristics, and subjective neighborhood experiences, and there is evidence of relationships with frailty in later life. A literature review of Duppen et al. (2017) demonstrates that mainly social participation and neighborhood characteristics can have a protective or balancing function in the frailty levels of community-dwelling older people. Feeling secure in the neighborhood, neighbourhood social cohesion and having a sense of belonging have been shown to be protective against frailty (Cramm & Nieboer, 2013). In addition, physical and social participation seem to contribute to higher levels of quality of life in frail older people (van der Vorst et al., 2017).

Discussion and conclusion

This paper started with the old Indian tale of six blind men and an elephant to indicate that reality may be viewed differently depending upon one's perspective: by touching only one part of the elephant, people fail to see the whole picture. Throughout the paper, we have argued that the literature on frailty resembles this Indian tale very much. The debate on frailty could benefit from a more comprehensive and integrative view, combining the insights from all blind men.

The aim of this paper was not only to describe and criticize this fragmented blindness, but also to give directions for how to move forward in frailty research. In doing so, we aimed to move

away from the 'dominant, blind view' on frailty, i.e. the biomedical domination of and micro-perspective on frailty and discussed 3 main themes: 1) frailty as a multidimensional and multilevel concept; 2) positive perspectives on frailty in later life; and 3) moving from a merely deficit-based approach to frailty towards the concept of frailty-balance. Building upon these insights and perspectives, we propose three principles that can shape research and policies concerning care and support for frail older people. Our ambition is not to offer an exhaustive list, but rather a basis for further exploration and debate: 1) adopting a multidimensional, multilevel, dynamic and positive view on frailty; 2) moving from dependency to interdependency; and 3) giving voice to (the resilience of) frail older people.

Adopting a multidimensional, multilevel, dynamic and positive view on frailty

Research on frailty rarely differentiates by type of frailty. However, future research could benefit from a multidimensional and multilevel approach, both in terms of research on prevalence, risk factors and effects. Including (simultaneously) the different types of frailty (i.e. physical, psychological, cognitive, social and environmental) generates new insights in terms of different risk profiles (e.g. Dury et al., 2016), or their different effects on for example quality of life (e.g. Gobbens & van Assen, 2017).

Future research on frailty is encouraged to move away from the individual, biomedical focus on decline and impairment in which old-age, and frail older people in particular, are often associated with dependence, disability, increased health care use, and mortality (Tocchi, 2015) to a strength-based perspective. The historical focus on what older people can no longer do (i.e. their deficits), should be replaced, or at least completed by an emphasis on their abilities and positive aspects of old-age. As frailty is believed to be a dynamic concept, (i.e. frailty cannot only increase with age, but it can be resolved or diminished (Rockwood et al., 1994; Sipsma, 1993), future research studies should not only focus on deficits, but also take strengths and resources of the older person and its environment into account. Deficits, strengths and resources are not only to be considered on the individual level, but rather research has to include the macro level perspective (the impact of wider social structures, such as state, education, media and economy), and the meso level perspective (impact of family, community, neighborhoods, institutions or city infrastructure). Frailty is not the attribute of the individual but created by macro and meso conditions. People are not frail solely by personal characteristic but are also fragilized by systemic and community structures.

In addition, more research is needed on positive outcomes. Although ample research finds a negative correlation between frailty and quality of life (Dury et al., 2018) or wellbeing (Lloyd et al., 2016), results also indicate that despite being (classified as) frail, many older people also experienced high levels of quality of life or meaning in life (Dury et al., 2018; van der Vorst et al., 2017). The key challenge will be to identify and influence factors that might balance the

relation between frailty and positive outcome variables. We should look for (a combination of) balancing factors that might yield that frail older people still experience a good quality of life. From a public health perspective, this may be helpful to generate a shift from intervention-focused health care towards a more preventive focus. Instead of combating frailty, Hertogh (2013) proposed an emphasis on active anticipation (detection - prevention) and on assisting people in finding an adaptive response to the implications of frailty, what we propose as balancing their frailty-balance. For example, in a recently published systematic literature review (Looman, Huijsman, & Fabbricotti, 2018), it was shown that while interventions might not be effective on diminishing the frailty level, interventions can improve positive outcomes such as wellbeing and life satisfaction.

Consequently, in research on frailty we state that it is not enough to measure only frailty. Only the combination from this frailty-information with positive outcomes, and balancing factors can generate an integrated picture on the situation of older people, and consequently on their needs/wishes for care, support or actions.

Moving from dependency towards interdependency

The concept of balancing factors, with an increasing focus on assets and resources of older people in response to the frailty they experience, link to the idea of moving away from a 'dependency'- towards an 'interdependency'-perspective on old age (Kaufman, 1994; Munnichs, 1976). Already in 1976, Munnichs et al. expressed the idea that dependency is often placed against independency as if they contradict and exclude each other. One seems blind for the independency of 'dependent' people and for the dependency of 'independent' people. Reflections and discussions in this regard call for a more diverse conceptualization to understand the complex inter-relational nature of care and support instead of the simple dichotomy of 'support-giver' versus 'support recipient'. In research on Active Caring Communities in Brussels (Belgium), older people, who were denoted as frail and were often viewed solely as care and support recipients by care professionals explained that they themselves were helping other neighbors and family members or expressed their desire and willingness to do so. Equally, informal carers underlined their personal needs for more support and care (Smetcoren et al., 2018). The ethos of independence and autonomy ignores the value of interdependency, which seems a preferred notion because it expresses more the reality of reciprocity and lived experiences of older people (Becker, 1994).

In the same line of reasoning we see that different care ethicists criticize the 'individualistic' approach of mastery and autonomy (Tronto, 1993, 2001; Verkerk, 2001) as 'the ideal of independency in human life', as this implies that many persons in need of care and support cannot be autonomous (Janssen, Abma, & Van Regenmortel, 2012). Whereas dominant

perspectives on frailty assume that frail older people lack autonomy, the ethic of care focuses more on a relational autonomy, which not only takes people's own perceived efforts into account, but also the influence of external factors like other persons (Claassens et al., 2014; Tronto, 1993, 2001). This might offer a promising perspective to study frailty in older people, which in the dominant models remained 'blind'.

Giving voice to (the resilience of) frail older people

Experiences and perspectives of older people themselves may not always be the same as those of professionals (e.g. Boeckxstaens & De Graaf, 2011; van der Vorst et al., 2018). As demonstrated in several studies, a profound power imbalance between care professionals and their patients exists. For example, nurses can be unwilling to share their decision-making powers with patients because they 'know best' (Henderson, 2003), or doctors feel limited by time pressure and therefore cannot provide the opportunity to discuss end-of-life care, even if (frail) older people express this desire (Sharp et al., 2013). Not only daily practices, but also academic literature on frailty often neglects the lived experiences and power of frail older persons themselves. Grenier (2006) has criticized this by making the crucial distinction between 'being' (i.e. the 'objective' classification or assessment) and 'feeling' frail (i.e. the subjective emotion or identity).

In addition, we understand that 'frailty' may be socially induced, meaning that older persons become frail as a consequence of the gaze of others, who view them as frail and dependent (Markle-Reid & Browne 2003; Grenier, 2007). Conversely, research directed on the experience of older people, although still rather limited, does seem to indicate that frail older persons generally do not think about themselves in terms of frailty (Becker, 1994; Puts, Shekary, Widdershoven, Heldens, & Deeg, 2009), or dislike an approach in which they are perceived as 'only frail' or someone with merely (a risk of) deficits (Lette, Baan, van den Berg, & de Bruin, 2015). Frailty research would benefit from more qualitative research, learning from the experiences and stories of older people themselves. Research on frailty should not be considered in a (post)positivist view, with the aim of prediction or explanation and generalizing findings. Rather, it can benefit from a constructivist and even transformative philosophical framework, with the aim of working towards the overall understanding of frailty, through the narratives of people living under challenging living conditions (Creswell, 2014).

In conclusion, frailty research has a long tradition in gerontological and geriatric research, is a core subject for many researchers and a key-theme in health practice. However, as this paper argues, we also have to acknowledge its current limitations. The tale of the six blind men and the elephant is a symbol for the narrow view of many involved in frailty-research. The dominance of the biomedical model on frailty ignores the multidimensional, multilevel,

subjective, positive and dynamic nature of the concept. Moving towards such an integrative approach of frailty might also alter practice (on for example frailty detection and interventions) and policy. Adopting a multidimensional and multilevel view on frailty, where also positive outcomes (such as wellbeing, quality of life, life satisfaction, meaning in life or mastery) are measured, where in addition to deficits focus is placed on assets and resources of older people, where care is recognized as an interdependent process and voice is given to frail older people (and listened to), will enable frailty-research to become future-proof. A move from frailty towards the concept of frailty-balance might be a first fruitful way forward.

Building upon these three principles, innovative policies concerning care and support for frail older people can be shaped. For the last 30 years, Western Europe has been facing a continuing trend away from institutional care towards community care (Means, Richards, & Smiths, 2008). In the future, most (including chronic) care for older people will take place at home, in the community. Although often driven by financial concerns over the costs of institutional care, this emphasis on aging in place has also been supported through an extensive academic literature on the preferences of older people themselves (Löfqvist et al., 2013). This so-called 'aging in place' is the main objective of many long-term care systems, such as in Belgium. As older people stress the importance of well-being in their life, especially when being frail and care dependent, the concept of aging in place should be further extended to aging *well* in the *right* place. This will require strengthening of and support for community health and social care. More attention is needed for 1) anticipatory care policies; (2) targeting frailty primarily in the public domain via the development of proactive and sustainable comprehensive community care; and 3) integrated care where social services should be complemented by timely clicking in adequate health services comprehensively addressing multidimensional frailty, while recognizing the strengths and resources of older people.

References

1. Achenbaum, W.A. (2009). A Metahistorical Perspective on Theories of Aging. In Bengtson, V.L., Gans, D., Putney, N.M., & Silverstein, M. (Eds), *Handbook of Theories of Aging* (second edition, pp. 25-38). New York: Springer.
2. Ament, B.H., de Vugt, M.E., Verhey, F.R., & Kempen, G.I. (2014). Are physically frail older persons more at risk of adverse outcomes if they also suffer from cognitive, social, and psychological frailty? *European Journal of Ageing*, 11(3), 213-219. doi:10.1007/s10433-014-0308-x
3. Andreasen, J., Lund, H., Aadahl, M., Gobbens, R.J.J., & Sorensen, E.E. (2015). Content validation of the Tilburg Frailty Indicator from the perspective of frail elderly. A qualitative explorative study. *Archives of Gerontology and Geriatrics*, 61, 392–399. doi:10.1016/j.archger.2015.08.017
4. Armstrong, J.J., Stolee, P., Hirdes, J.P., & Poss, J.W. (2010). Examining three frailty conceptualizations in their ability to predict negative outcomes for home-care clients. *Age and Ageing*, 39(6), 755-758. doi:10.1093/ageing/afq121
5. Baltes, P.B., & Smith, J. (2003). New frontiers in the future of aging: from successful aging of the young old to the dilemmas of the fourth age. *Gerontology*, 49(2), 123–135. doi:10.1159/000067946
6. Barnett, A., Zhang, C.J.P., Johnston, J.M., & Cerin, E.R. (2018). Relationships between the neighborhood environment and depression in older people: a systematic review and meta-analysis. *International Psychogeriatrics*, 30(8),1153-1176. doi: 10.1017/S104161021700271X.
7. Beard, J.R., Officer, A., de Carvalho, I.A., Sadana, R., Pot, A.M., Michel, J.-P., et al. (2016). The World report on ageing and health: A policy frame- work for healthy ageing. *The Lancet*, 387(10033), 2145-2154. doi:10.1016/S0140- 6736(15)00516-4
8. Becker, G. (1994). The oldest old: autonomy in the face of frailty. *Journal of Aging Studies*, 8(1), 59-76. doi:10.1016/0890-4065(94)90019-1
9. Bengtson, V.L., Gans, D., Putney, N.M., & Silverstein, M. (2009). *Handbook of Theories of Aging* (second edition). New York: Springer.
10. Bergman, H., Ferrucci, L., Guralnik, J., Hogan, D. B., Hummel, S., Karunanathan, S., & Wolfson, C. (2007). Frailty: An Emerging Research and Clinical Paradigm—Issues and Controversies. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, 62(7), 731–737.
11. Boeckxstaens, P., & De Graaf, P. (2011). Primary care and care for older persons: Position paper of the European Forum for Primary Care. *Quality in Primary Care*, 19(6),

369-389.

12. Boers, M., & Jentoft, A.J.C. (2015). A New Concept of Health Can Improve the Definition of Frailty. *Calcified Tissue International*, 97(5), 429–431. doi:10.1007/s00223-015-0038-x
13. Bravell, M.E., Westerlind, B., Midlöv, P., Östgren, C.J., Borgquist, L., & Mölsted, S. (2011). How to assess frailty and the need for care? Report from the Study of Health and Drugs in the Elderly (SHADES) in community dwellings in Sweden. *Archives of Gerontology and Geriatrics*, 53(1), 40-45. doi:10.1016/j.archger.2010.06.011
14. Brown, D.A.V. (2002). *Sociodemographic Vulnerability in the Caribbean: an Examination of the Social and Demographic Impediments to Equitable Development with Participatory Citizenship in the Caribbean at the Dawn of the Twenty-first Century*. Santiago, Chile: United Nations Publication.
15. Brown, I., Renwick, R., & Raphael, D. (1995). Frailty: constructing a common meaning, definition, and conceptual framework. *International Journal of Rehabilitation Research*, 18(2), 93-102.
16. Buchman, A.S., & Bennet, D.A. (2013). Cognitive frailty. *The Journal of Nutrition Health and Aging*, 14(9), 738-739. doi: 10.1007/s12603-013-0397-9
17. Buckinx, F., Rolland, Y., Reginster, J.-Y., Ricour, C., Petermans, J., & Bruyère, O. (2015). Burden of frailty in the elderly population: perspectives for a public health challenge. *Archives of Public Health*, 73(1), 19. doi:10.1186/s13690-015-0068-x
18. Buffel, T., Verté, D., De Donder, L., De Witte, N., Dury, S., Vanwing, T., & Bolsenbroek, A. (2012). Theorising the relationship between older people and their immediate social living environment. *International Journal of Lifelong Education*, 31(1), 13-32. doi:10.1080/02601370.2012.636577
19. Bunt, S., Steverink, N., Olthof, J., van der Schans, C.P., & Hobbelen, J.S.M. (2017). Social frailty in older people: a scoping review. *European Journal of Ageing*, 14(3), 323-334. doi:10.1007/s10433-017-0414-7
20. Chen, K.-W., Chang, S.-F., & Lin, P.-L. (2017). Frailty as a Predictor of Future Fracture in Older people: A Systematic Review and Meta-Analysis. *Worldviews on Evidence-Based Nursing*, 14(4), 282-293. doi:10.1111/wvn.12222
21. Claassens, L., Widdershoven, G.A., van Rhijn, S.C., Van Nes, F., van Groenou, M.I.B., Deeg, D.J.H., & Huisman, M., (2014). Perceived control in health care: A conceptual model based on experiences of frail older people. *Journal of Aging Studies*, 31, 159-170. doi:10.1016/j.jaging.2014.09.008
22. Clarfield, A.M., Bergman, H., & Kane, R. (2001). Fragmentation of care for frail older people—an international problem. Experience from three countries: Israel, Canada, and the United States. *Journal of the American Geriatrics Society*, 49(12), 1714–1721.

23. Cramm, J.M., & Nieboer, A.P. (2013). Relationships between frailty, neighborhood security, social cohesion and sense of belonging among community-dwelling older people. *Geriatrics & Gerontology International*, 13(3), 759-763. doi:10.1111/j.1447-0594.2012.00967.x
24. Creswell, J.W. (2014). *Research Design: Qualitative and Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA: Sage.
25. Dannefer, D., & Kelley-Moore, J.A. (2009). Theorizing the life course: new twists in the paths. In Bengtson, V.L., Gans, D., Putney, N.M., & Silverstein, M. (Eds), *Handbook of Theories of Aging* (second edition, pp. 389-412). New York: Springer.
26. de Blok, C., Meijboom, B., Luijkx, K., & Schols, J. (2009). Demand-based Provision of Housing, Welfare and Care Services to Elderly Clients: From Policy to Daily Practice Through Operations Management. *Health Care Analysis*, 17(1), 68-84. doi:10.1007/s10728-008-0095-7
27. De Roeck, E.E., Dury, S., De Witte, N., De Donder, L., Bjerke, M., De Deyn, P.P., et al. (2018). CFAI-Plus: Adding cognitive frailty as a new domain to the comprehensive frailty assessment instrument. *International Journal of Geriatric Psychiatry*, 1-7. doi:/10.1002/gps.4875
28. De Witte, N., De Donder, L., Dury, S., Buffel, T., Verté, D., & Schols, J. (2013). A theoretical perspective on the conceptualisation and usefulness of frailty and vulnerability measurements in community dwelling older people. *Aporia: the Nursing Journal*, 5(1), 13-31.
29. De Witte, N., Gobbens, R., De Donder, L., Dury, S., Buffel, T., Schols, J., & Verté, D. (2013b). The Comprehensive frailty assessment instrument: development, validity and reliability. *Geriatric Nursing*, 34(4), 274-281. doi:10.1016/j.gerinurse.2013.03.002
30. Denfeld, Q.E., Winters-Stone, K., Mudd, J.O., Gelow, J.M., Kurdi, S., & Lee, C.S. (2017). The prevalence of frailty in heart failure: A systematic review and meta-analysis. *International Journal of Cardiology*, 236, 283-289. doi:10.1016/j.ijcard.2017.01.153
31. Dillaway, H.E., & Byrnes, M. (2009). Reconsidering Successful Aging: A Call for Renewed and Expanded Academic Critiques and Conceptualizations. *Journal of Applied Gerontology*, 28(6), 702-722. doi:10.1177/0733464809333882
32. Duppen, D., Van der Elst, M.C.J., Dury, S., Lambotte, D., De Donder, L., & D-SCOPE consortium. (2017). The Social Environment's Relationship With Frailty. *Journal of Applied Gerontology*. doi:10.1177/0733464816688310
33. Dury, S., De Roeck, E., Duppen, D., Fret, B., Hoeyberghs, L., Lambotte, D., et al. (2016). Identifying frailty risk profiles of home-dwelling older people: focus on sociodemographic and socioeconomic characteristics. *Aging & Mental Health*, 1-9.

doi:10.1080/13607863.2016.1193120

34. Dury, S., Dierckx, E., van der Vorst, A., Van der Elst, M., Fret, B., Duppen, D., et al. (2018). Detecting frail, older people and identifying their strengths: results of a mixed-methods study. *BMC Public Health*, 18, 191. doi:10.1186/s12889-018-5088-3
35. Estes, C.L., Biggs, S., & Phillipson, C. (2003). *Social Theory, Social Policy and Ageing: A Critical Introduction*. Berkshire: Open University Press.
36. Federal Council on the Aging. (1978). *Public Policy and the Frail Elderly: a staff report* (Staff Report Nr. DHEW-OHDS-79-20959). Washington, D.C., Lewis, D.
37. Fried, L.P., Tangen, C.M., Walston, J., Newman, A.B., Hirsch, C., Gottdiener, J., et al. (2001). Frailty in older people: evidence for a phenotype. *The Journal of Gerontology Series A: Biological Sciences and Medical Sciences*, 56, 146-156. doi: 10.1136/pgmj.2006.048587
38. Gobbens, R.J., Luijckx, K.G., Wijnen-Sponselee, M.T., & Schols, J.M. (2010). Toward a conceptual definition of frail community dwelling older people. *Nursing Outlook*, 58(2), 76-86. doi:10.1016/j.outlook.2009.09.005
39. Gobbens, R.J.J., & van Assen, M.A.L.M. (2017). Associations between multidimensional frailty and quality of life among Dutch older people. *Archives of Gerontology and Geriatrics*, 73, 69-76. doi:10.1016/j.archger.2017.07.007
40. Grenier, A. (2006). The distinction between being and feeling frail: Exploring emotional experiences in health and social care. *Journal of Social Work Practice*, 20(3), 299-313. doi:10.1080/02650530600931849
41. Grenier A. (2007). Constructions of frailty in the English language, care practice and the lived experience. *Ageing and Society*, 27(3), 425-444. doi:10.1017/S0144686X06005782
42. Grenier, A., Lloyd, L., & Phillipson, C. (2017). Precarity in late life: rethinking dementia as a 'frailled' old age. *Sociology of Health & Illness*, 39(2), 318–330. doi:10.1111/1467-9566.12476
43. Grundy, E. (2006). Ageing and vulnerable older people: European perspectives. *Ageing & Society*, 26(1), 105-134. doi:10.1017/S0144686X05004484
44. Gullette, M.M. (1997). *Declining to decline: Cultural combat and the politics of the midlife*. Virginia: University of Virginia Press.
45. Gwyther, H., Shaw, R., Jaime Dauden, E., et al. (2018). Understanding frailty: a qualitative study of European healthcare policy-makers' approaches to frailty screening and management. *BMJ Open* 2018;8:e018653. doi:10.1136/bmjopen-2017-018653
46. Hagestad, G.O., & Dannefer, D. (2001). Concepts and theories of aging: Beyond microfication in social science approaches. In Binstock R.H., & George L.K. (Eds.), *Handbook of Aging and the Social Sciences* (pp. 3-21). San Diego, CA: Academic

Press.

47. Henderson, S. (2003). Power imbalance between nurses and patients: a potential inhibitor of partnership in care. *Journal of Clinical Nursing*, 12(4), 501-508. doi:10.1046/j.1365-2702.2003.00757.x
48. Hertogh, C. (2013). Aging beyond frailty: the future of old age. In Schermer, M., & Pinxten, W. (Eds.), *Ethics, Health Policy and (Anti)-aging: mixed blessings* (pp. 91-104). Dordrecht: Springer.
49. Hogan, D.B., MacKnight, C., & Bergman, H. (2003). Models, definitions, and criteria of frailty. *Aging, Clinical and Experimental Research*, 15(3), 1-29. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/14580013>
50. Holroyd-Leduc, J., Resin, J., Ashley, L., Barwich, D., Elliott, J., Huras, P., et al. (2016). Giving voice to older people living with frailty and their family caregivers: engagement of older people living with frailty in research, health care decision making, and in health policy. *Research Involvement and Engagement*, 2(23), 1-19. doi:10.1186/s40900-016-0038-7
51. Janssen, B.M., Abma, T.A., & Van Regenmortel, T. (2011). Identifying sources of strength: resilience from the perspective of older people receiving long-term community care. *European Journal on Ageing*, 8, 145-56.
52. Janssen, B.M., Abma, T.A., & Van Regenmortel, T. (2012). Maintaining mastery despite age related losses: The resilience narratives of two older women in need of long-term community care. *Journal of Aging Studies*, 26(3), 343-354. doi:10.1016/j.jaging.2012.03.003
53. Kaufman, S.R. (1994). The social construction of frailty: An anthropological perspective. *Journal of Aging Studies*, 8(1), 45-58. doi:10.1016/0890-4065(94)90018-3
54. Kelaiditi, E., Cesari, M., Canevelli, M. 2., Van Kan, G. A., Ousset, P. J., Gillette-Guyonnet, S., et al. (2013). Cognitive frailty: rational and definition from an (IANA/IAGG) international consensus group. *The Journal of Nutrition, Health & Aging*, 17(9), 726-734. doi: 10.1007/s12603-013-0367-2.
55. Kelaiditi, E., Andrieu, S., Cantet, C., Vellas, B., & Cesari, M. (2015). Frailty index and incident mortality, hospitalization, and institutionalization in Alzheimer's disease: data from the ICTUS study. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, 71(4), 543–548. doi:10.1093/gerona/glv137
56. Lacas, A., & Rockwood, K. (2012). Frailty in primary care: A review of its conceptualization and implications for practice. *BMC Medicine*, 10(4), 1-9. doi:10.1186/1741-7015-10-4
57. Lahousse, L., Maes, B., Ziere, G., Loth, D.W., Verlinden, V.J., Zillikens, M.C., et al.

- (2014). Adverse outcomes of frailty in the elderly: the Rotterdam study. *European Journal of Epidemiology*, 29(6), 419-427. doi:10.1007/s10654-014-9924-1
58. Lally, F., & Crome, P. (2007). Understanding frailty. *Postgraduate Medical Journal*, 83(975), 16-20. DOI: 10.1136/pgmj.2006.048587
59. Lambotte, D., Kardol, M. J. M., Schoenmakers, B., Fret, B., Smetcoren, A.-S., De Roeck, E. E., Van der Elst, M., De Donder, L., & D-SCOPE Consortium. (2018). Relational aspects of mastery for frail, older adults: The role of informal caregivers in the care process. *Health and Social Care in the Community*. doi: 10.1111/hsc.12676
60. Lawton, M.P., & Nahemow, L. (1973). Ecology and the aging process. In Eisdorfer, C. & Lawton M.P. (Eds.), *The psychology of adult development and aging* (pp. 619-674). Washington, DC: American Psychological Association.
61. Lawton, M.P., & Simon, B.B. (1968). The ecology of social relationships in housing for the elderly. *Gerontologist*, 8(2), 108-115. doi:10.1093/geront/8.2.108
62. Lette, M., Baan, C.A., van den Berg, M., & de Bruin, S.R. (2015). Initiatives on early detection and intervention to proactively identify health and social problems in older people: experiences from the Netherlands. *BMC Geriatrics*, 15(143), 1-13. doi:10.1186/s12877-015-0131-z
63. Lloyd, A., Kendall, M., Starr, J.M., & Murray, S.A. (2016). Physical, social, psychological and existential trajectories of loss and adaptation towards the end of life for older people living with frailty: a serial interview study. *BMC Geriatrics*, 16(176), 1-15. doi:10.1186/s12877-016-0350-y
64. Löfqvist C., Granbom M., Himmelsbach I., Iwarsson S., Oswald F., & Haak M. (2013). Voices on relocation and aging in place in very old age - a complex and ambivalent matter. *The Gerontologist* 53(6), 919-927. doi: 10.1093/geront/gnt034.
65. Looman, W.M., Huijsman, R., & Fabbricotti, I.N. (2018). The (cost-)effectiveness of preventive, integrated care for community-dwelling frail older people: A systematic review. *Health & Social Care in the Community*. doi:10.1111/hsc.12571.
66. Markle-Reid, M., & Browne, G. (2003). Conceptualizations of frailty in relation to older people. *Journal of Advanced Nursing*, 44(1), 58-68. doi: 10.1046/j.1365-2648.2003.02767.x
67. Martinson, M., & Minkler, M. (2006). Civic Engagement and Older people: A Critical Perspective. *The Gerontologist*, 46(3), 318-324. doi:10.1093/geront/46.3.318
68. Means R., Richards S., & Smith, R. (2008) *Community Care. Policy and Practice (4th ed.)*. New York: Palgrave MacMillan.
69. Morley, J.E., Vellas, B., & van Kan, G.A. (2013). Frailty consensus: A call to action. *Journal of the American Medical Directors Association*, 14(6), 392-397. doi:10.1016/j.jamda.2013.03.022
70. Mosquera, C., Spaniolas, K., & Fitzgerald, T.L. (2016). Impact of frailty on surgical

- outcomes: the right patient for the right procedure. *Surgery*, 160(2): 272–280. doi:10.1016/j.surg.2016.04.030
71. Munnichs, J. (1976). Dependency, interdependency and autonomy: an introduction. In Munnichs, J.M.A., & van den Heuvel, W.J.A. (Eds), *Dependency or interdependency in old age* (pp. 3-8). Dordrecht: Springer.
 72. Nicholson, C., Meyer, J., Flately, M., & Holman, C. (2013). The experience of living at home with frailty in old age: a psychosocial qualitative study. *International Journal of Nursing Studies*, 50(9), 1172-1179. doi:10.1016/j.ijnurstu.2012.01.006
 73. Nicholson, C., Gordon, A.L., & Tinker, A. (2016). Changing the way “we” view and talk about frailty... *Age and Ageing*, 46(3), 349-351. doi:10.1093/ageing/afw224
 74. Peace, S., Dittman-Kohli, F., Westerhof, G.J., & Bond, J. (2007). The Ageing World. In Bond, J., Peace, S., Dittmann-Kohli, F., & Westerhof, G. (Eds), *Ageing in Society* (pp 1-14). London: Sage.
 75. Puts, M.T., Shekary, N., Widdershoven, G., Heldens, J., & Deeg, D.J. (2009). The meaning of frailty according to Dutch older frail and non-frail persons. *Journal of Aging Studies*, 23(4), 258-266. doi:10.1016/j.jaging.2008.03.002
 76. Rockwood, K., Fox, R.A., Stolee, P., Robertson, D., & Beattie, B.L. (1994). Frailty in elderly people: an evolving concept. *Canadian Medical Association Journal*, 150(4), 489-495. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1486322/>
 77. Roppolo, M., Mulasso, A., Gobbens, R.J., Mosso, C.O., & Rabaglietti, E. (2015). A comparison between uni- and multidimensional frailty measures: prevalence, functional status, and relationships with disability. *Clinical Interventions in Aging*, 10, 1669–1678. doi: 10.2147/CIA.S92328
 78. Sharp, T., Moran, E., Kuhn, I., & Barclay, S. (2013). Do the elderly have a voice? Advance care planning discussions with frail and older individuals: a systematic literature review and narrative synthesis. *British Journal of General Practice*, 63(615), 657-668. doi:10.3399/bjgp13X673667
 79. Sipsma, D.H. (1993). Modellen en paradigma's in de geriatrie: Het wankel evenwicht [Models and paradigms in geriatrics]. *Medisch Contact*, 48(8), 1229-1231.
 80. Smetcoren, A.-S, De Donder, L., Duppen D., De Witte, N., Vanmechelen, O., & Verté, D. (2018). Towards an Active Caring Community in Brussels. In Buffel, T., Handles, S., Phillipson, C. (Eds.), *Age-friendly communities: A Global Perspective* (pp.97-118). Bristol: Policy Press.
 81. Soysal, P., Isik, A.T., Carvalho, A.F., Fernandes, B.S., Solmi, M., Schofield, P., et al. (2017). Oxidative stress and frailty: A systematic review and synthesis of the best evidence. *Maturitas*, 99, 66-72. doi:10.1016/j.maturitas.2017.01.006
 82. Steels, S. (2015). Key characteristics of age-friendly cities and communities: a review.

Cities, 47, 45-52. doi:10.1016/j.cities.2015.02.004

83. Sternberg, S.A., Schwartz, A.W., Karunanathan, S., Bergman, H., & Mark Clarfield, A. (2011). The identification of frailty: a systematic literature review. *Journal of the American Geriatrics Society*, 59(11), 2129-2138.
84. Steverink, N., Slaets, J.P.J., Schuurmans, H., & van Lis, M. (2001). Measuring frailty: Measuring frailty Measuring frailty Measuring frailty the Groningen Frailty Indicator (GFI). *The Gerontologist*, 41(1), 236-237.
85. Tocchi, C. (2015). Frailty in Older people: An Evolutionary Concept Analysis. *Research and Theory for Nursing Practice*, 29(1), 66–84. doi:10.1891/1541-6577.29.1.66
86. Tronto, J.C. (1993). *Moral Boundaries: A Political Argument for an Ethic of Care*. New York: Routledge.
87. Tronto, J.C. (2001). An ethic of care. In Holstein, M.B., & Mitzen, P.B. (Eds), *Ethics in Community Based elder care*. New York, San Francisco: Springer Publishing Company, INC, American Society on Aging.
88. Van Cauwenberg, J., De Donder, L., Clarys, P., De Bourdeaudhuij, I., Buffel, T., De Witte, N. et al. (2014). Relationships between the perceived neighborhood social environment and walking for transportation among older people. *Social Science & Medicine*, 104, 23 – 30. DOI: 10.1016/j.socscimed.2013.12.016
89. van der Vorst, A., Zijlstra, G.A.R., De Witte, N., Vogel, R.G.M., Schols, J.M.G.A., Kempen, G.I.J.M., & D-SCOPE consortium (2017). Explaining discrepancies in self-reported quality of life in frail older people: a mixed-methods study. *BMC Geriatrics*, 17(251), 1-11. doi:10.1186/s12877-017-0641-y
90. Van der Vorst, A., Zijlstra, G. A. R., De Witte, N., Vogel, R. G. M., Schols, J. M. G. A., Kempen, G. I. J. M., & D-SCOPE Consortium. (2017). Explaining discrepancies in self-reported quality of life in frail older people: A mixed-methods study. *BMC Geriatrics*, 17, 251. doi: 10.1186/s12877-017-0641-y
91. van der Vorst, A., Zijlstra, G.A.R., De Witte, N., De Lepeleire, J., Kempen, G.I.J.M., Schols, J.M.G.A., & D-SCOPE Consortium. (2018). Can proxy assessments serve as a first screener for identifying people at risk for multidimensional frailty? *European Geriatric Medicine*, 9(4), 501-507. DOI: 0.1007/s41999-018-0067-x
92. Van Regenmortel, S. (2017). *Social exclusion in later life: measurement and drivers of social exclusion among older people*. Zelzate: Open University Press.
93. Verkerk, M.A. (2001). The care perspective and autonomy. *Medicine, Health Care and Philosophy*, 4(3), 289-294. doi:10.1023/A:1012048907443
94. Verma, G., O’Laughlin, J.P., Bunker, L., Peterson, S., & Frishman, W.H. (2017). Trial of Time: Review of Frailty and Cardiovascular Disease. *Cardiology in Review*, 25(5), 236-240. doi:10.1097/CRD.000000000000152.

95. Vermeiren, S., Vella-Azzopardi, R., Beckwee, D., Habbig, A.-K., Scafoglieri, A., Jansen, B., & Bautmans, I. (2016). Frailty and the Prediction of Negative Health Outcomes: A Meta-Analysis. *Journal of the American Medical Directors Association*, 17(12), 1163.e1-1163.e17. doi:10.1016/j.jamda.2016.09.010
96. Walston, J., Hadley, E.C., Ferrucci, L., Guralnik, J.M., Newman, A.B., Studenski, S.A., et al. (2006). Research agenda for frailty in older people: toward a better understanding of physiology and etiology: summary from the American Geriatrics Society/National Institute on Aging Research Conference on Frailty in Older people. *Journal of the American Geriatrics Society*, 54(6), 991-1001. doi:10.1111/j.1532-5415.2006.00745.x
97. Warmoth, K., Lang, I.A., Phoenix, C., Abraham, C., Andrew, M.K., Hubbard, R.E., Tarrant, M. (2015). "Thinking you're old and frail": a qualitative study of frailty in older people. *Ageing & Society*, 36(7), 1483–1500. doi: 10.1017/S0144686X1500046X