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The Use of Figurative Language to Describe Frailty in Older Adults

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Abstract

Introduction—Frailty impacts 15% of non-institutionalized older adults in the United States, yet confusion remains in defining and, in turn, assessing frailty. Figurative language, such as metaphor, can help to explain difficult scientific concepts and to form new theories. We aimed to examine the use of figurative language to describe frailty and to identify themes in the way figurative expressions are used. Understanding how frailty is described figuratively may offer insights for developing useful communication approaches in research settings.

Methods—We performed a comprehensive review of editorials in the scientific literature to explore figurative language used to describe frailty in older adults. We categorized themes among the figurative expressions, which may help to inform how to effectively communicate about frailty.

Results—We found 24 editorials containing 32 figurative expressions. The figurative expressions conceptualized frailty in six ways: 1) a complex, multifaceted concept; 2) an important issue in health and medicine; 3) indicative of something that is failing or faulty; 4) indicative of fragility; 5) representative of vulnerable, ignored persons; and 6) an opportunity for self-awareness and reflection.

Discussion—Our review highlights the heterogeneity in depictions of frailty, which is consonant with the lack of a standardized definition of frailty. We also found a novel aspect to the concept of frailty, which merits attention: frailty characterized as an opportunity for self-awareness and reflection. Figurative language, which often juxtaposes familiar with challenging, complex concepts, can offer insights on issues in frailty research and holds potential as a tool for researchers to improve communication about this important and disputed medical condition.

Keywords

frailty; review; health communication and language

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INTRODUCTION

Frailty is a recognized public health problem that has been estimated to impact nearly one out of every six non-institutionalized older adults in the United States [1]. Research over the past two decades has led to a refined conceptualization of frailty as a state of physiological dysregulation that can lead to catastrophic health declines for persons encountering a stressor event [2, 3]. However, the lack of an accepted working definition of frailty has led to complications for the field, most notably an ongoing confusion about the meaning of the word ‘frailty’ when used in research and scientific writing. While sometimes specifically defined, frailty is also used as a general synonym for vulnerability, poor health, functional decline, or old age [4]. Part of this lack of clarity is due to the choice of the word itself; the term “frailty” is vague and difficult to precisely pinpoint [4, 5]. Even when defined, confusion persists as to whether frailty should be assessed as a unified, biologically-driven phenomena (i.e., frailty phenotype) versus a cumulative effect of aging-related signs and symptoms (i.e., deficit accumulation index) [6]. Frailty holds significant potential for risk prediction and clinical-decision making [7], though more guidance is needed on how to best incorporate it, and which measure(s) to use, in clinical settings [8].

The communication of scientific and medical concepts, such as frailty, is an important component of the research process, as well as clinical practice [9, 10]. In scientific discourse, figurative language can serve as a communication tool for the purposes of pedagogy and critical explanation, and for theoretical and constructive conceptualization [11, 12]. Figurative comparisons, such as metaphor, often use a familiar concept to help explain or theorize on a complex or lesser known concept. Using these techniques can help to make abstract concepts tangible and describe novel hypotheses in familiar terms. For example, a metaphor of war has often been used when depicting the scientific enterprise to understand the complicated mechanisms of cancer and its potential cures —a “battle against cancer” in which the patient must fight an invasive enemy [13, 14]. In another example, discoveries in genetics have led to changes in the use of figurative expressions over time: first, a “blueprint of life” to give an architectural tangibility to the human genome; and, later, “pianists” that “play” the static genetic information in DNA to describe epigenetic processes [15]. Figurative comparisons may sometimes oversimplify, be reductionist, or even misshape and inhibit a more accurate understanding of scientific phenomena [16–18]; for example, there are limitations to the utility of the war metaphor in cancer, especially given that surviving cancer may depend on many factors outside of how hard a patient “fights” [13, 19]. Yet, the ability for figurative language to provide a view of one concept through comparisons to another holds value: these expressions can “often transcend the merely descriptive to yield profoundly enlightening insights” [20]. Figurative techniques may offer novel and unexpected comparisons, and can also allow for relatable descriptions free of scientific jargon. Through such insights, figurative language may help to improve understanding and communication about complex scientific concepts – here, frailty – and may resonate more readily in research and in clinical practice.

In the following review, we identified figurative language that has been used to describe frailty in editorials among the academic research literature. Figurative expressions are more often found in editorials than in standard investigational articles, due to the typically

unstructured and opinion-based nature of the editorial [21]. We aimed to categorize the purposes of these figurative expressions, and to consider whether the use of figurative language can help to highlight common themes and provide insight into the ways researchers conceptualize and communicate about frailty.

METHODS

We performed a comprehensive literature review to examine if and how figurative language has been used in editorials to describe frailty in older adults. We limited our search to editorials for two reasons: 1) editorials are typically opinion-based and may contain language with more “literary flair” [22] (see also Segal [21]); and 2) feasibility in terms of search size. Our search was conducted from the start of the following databases through December 31, 2016: PubMed; EMBASE/MEDLINE; and CINAHL Plus/CINAHL/MEDLINE/PsycINFO combined. Please see the supplementary file (Appendix 1) for the specific search terms used in each database.

Citation files from each database were combined in EndNote X7, where de-duplication was performed. The first author (BB) reviewed the titles/abstracts of these articles and removed articles that did not focus on frailty. The full texts of the remaining articles were reviewed by two authors (BB, RM) to identify examples of figurative language, such as metaphor, simile, analogy, and other figurative techniques [23]. See supplemental file, Appendix 2, for definitions.

Once identified, we analyzed the content to determine the purposes of the figurative language used, and classified expressions into categories that were generated inductively from this review. These categories, their definitions, and examples are described in the results section.

RESULTS

Our search identified 703 unique editorials (see Figure 1). After cursory review of titles and abstracts, 427 records were excluded for non-relevance. The remaining editorials were retrieved to review for the use of figurative language to describe frailty; 37 articles were further excluded for being unavailable or only in a non-English language. Of the reviewed 239 editorials, we found 24 editorials that included figurative language used to describe frailty. Table 1 summarizes these editorials, which were published between 1983 and 2016.

We identified 32 examples of figurative language used to describe frailty in these 24 articles. The most common figurative technique was metaphor, followed by analogy, simile, allusion, and allegory (see Appendix 2). After identifying figurative depictions of frailty, the purposes of the language used were classified into the following six categories:

1. Frailty as a *complex, multifaceted concept*: figurative language used to describe the complicated, intricate, sometimes evasive, nature of frailty, its etiology, ascertainment, and/or treatment;
2. Frailty as an *important issue in health and medicine*: figurative language used to highlight the significance of frailty identification or treatment;

3. Frailty as indicating *something that is failing or faulty*: figurative language used to compare a frail person to a broken or decaying object or process;
4. Frailty as *indicating fragility*: figurative language used to compare a frail person to a fragile or delicate object, which can be easily broken;
5. Frailty as representative of *vulnerable but ignored persons*: figurative language used to equate frail persons with images of neglect.
6. Frailty as an *opportunity for self-awareness and reflection*: figurative language used to describe the potential of the (physically) frail state to facilitate a greater attention to non-physical, spiritual, or self-reflections.

See Table 1 for information on the identified articles and figurative expressions, organized by category. Out of six categories, figurative language was most commonly utilized to discuss frailty as a complex, multifaceted concept. The complicated nature of understanding, measuring, and treating frailty was presented with comparisons to hard-to-define concepts such as beauty [24], and emergent, hard-to-predict phenomena such as the weather [25]. In terms of taking a measurement of frailty, necessarily a dynamically changing process, a figurative comparison was made to the difficulty of predicting the future speed of a car based on its characteristics at a stoplight [26]. The treatment of frailty was compared to: the use of complex military strategies [27]; a metaphor that frailty treatment may never have a “one-size-fits-all” solution [28]; and an allegory of the Greek myth of Eos to question whether or not extending life span will simply extend frailty [29, 30]. Other expressions depicted frailty as something that we are only beginning to recognize but still need to understand fully; in these examples, frailty was compared to a “figure in the stone” that is being carved out [31], or the “underwater part of the iceberg of aging” [32]. These examples of figurative language all represent attempts to illustrate frailty as a complex, hard-to-define state.

The importance of frailty was evident in metaphors that compared it to one of the “cornerstones of contemporary health care for older people” [33] and a “public health time bomb” [34]. Both the importance of frailty and the elusiveness around it are well-summarized by comparing frailty to the “Holy Grail” [35, 36].

Regarding properties or characteristics of those who are frail, we found comparisons of frailty to a failing or faulty entity. A frail person was compared to a “rickety car running out of gas” [37]. In another example, a frail body was described as “irrational, the transient...the testimony to finitude, imperfection, and eventual death” [38].

A fourth category of expressions depicted frail persons as fragile, comparing them to delicate objects or as caught in vulnerable scenarios. Surgery in frail patients was described as like “knocking a porcelain figure off a table” [39], and treating frail patients was compared to “balancing on a tightrope” [40].

Frail patients were also depicted as a vulnerable but overlooked population in the health care system. Expressions within this category included describing frail persons as a “footnote” [41], “missing from the medical radar” [42], a “lost tribe” [43], and an “elephant in the operating room” that is under-recognized and under-treated [44].

Lastly, frailty was described as an opportunity for self-awareness and reflection, using comparisons to a “lens” and “mirror” [42]. One example described frailty as one “color of existence” that is “especially strong”, suggesting it may impact or strengthen one’s sense of self [38]. Another example characterized frailty as an important, even positive, part of the human experience - “a limit and a freedom... a beloved whose so-called imperfections are an essential part of the whole” [38].

DISCUSSION

To our knowledge, this is the first literature review of the uses of figurative language to describe frailty in older adults. We found 32 examples in two dozen editorials that used figurative techniques to depict frailty. We identified six categories in which figurative expressions have been used to describe frailty, and found the most frequent purpose was to describe frailty as a complex, multifaceted, and often elusive concept.

In our first category, frailty was figuratively compared to complex and evasive concepts, which may reflect, or even result from, a lack of operational agreement and the numerous definitions used in research and clinical practice [45]. Figurative language about frailty was also used to discuss key conceptual issues, such as: a) whether frailty measures should be dynamic versus static [5] in the figurative example of predicting the future speed of resting car [26]; and b) whether the underlying primary and secondary causes of frailty can be better understood [46] in the metaphor of the submerged ice below an iceberg’s tip [32]. From examples in our categories related to faulty or fragile objects, figurative language has also depicted a conceptual distinction between frail persons as those who are already presenting with evident symptoms and health problems – the “rickety cars” – versus those who are fragile, delicate and vulnerable of being easily overcome by stressors – the “porcelain figures”. This type of debate has ensued for more than a decade [47].

We would argue that figurative depictions, such as an easily relatable metaphor, can be helpful to the field by using commonly-understood comparisons to elucidate and speculate on unresolved topics in frailty research. To begin, metaphoric language can highlight and clarify a known problem with a new and unexpected comparison. For example, it has been argued that frailty assessments that focus solely on the static characteristics of a patient may not provide the information needed to understand the risk for serious declines and adverse outcomes; this critique of static measures has not been widely addressed beyond acknowledgment that collecting dynamic measures is more challenging. By figuratively comparing this issue to the clear difficulty of estimating the probable speed of car at rest, the point becomes more salient and relatable, despite the challenges involved with dynamic measurements.

Additionally, figurative language can add an emotional context that may highlight the severity or importance of an issue. A striking example is the statement “our gerontological souls are still bleeding” in the editorial by Ferrucci and colleagues, a comment that the existing definitions of frailty feel incomplete[30]. The description of frailty as a “public health time bomb” is another dramatic example[34].

Some figurative and metaphoric language can exacerbate ageist stereotypes and make it challenging to communicate about frailty, especially to patients. In response to this type of concern, the Journal of the American Geriatrics Society recently changed its author guidelines to curb the use of negative, even catastrophic, aging-related terms (such as the common metaphor of the silver “tsunami”), which have been determined to be damaging to perceptions of aging [48]. In our study, the metaphor of a “rickety car running out of gas” [37] to describe a person who is frail depicted undesirable, body-centric traits of deterioration. Also, certain metaphors seem to depict frailty as potentially insurmountable; the allusion to the Holy Grail, the iceberg metaphor, and the “public health time bomb” all describe frailty in fatalistic and overwhelming terms. Though many challenges remain, much progress has been made in understanding the etiology, measurement and treatment of frailty during the past two decades. A more apt metaphor, therefore, can be seen with the analogy to sculpting, which states that approaches toward studying underlying causes of frailty “will begin to make the figure in the stone visible” [31] and that through rigorous, often time-consuming scientific investigations, answers to presently daunting questions can be reached.

Our finding of frailty characterized as an opportunity for self-awareness and reflection is unique and differs from the typical medical view of successful aging (e.g., without physical declines). Frail patients have expressed that issues of spirituality and meaningful activities are lacking in the existing definitions of frailty, and that the ability to maintain a sense of self in spite of losses can help frail older adults’ well-being [49, 50]. Aging and frailty have been proposed as providing an opportunity for the significant development of understanding and embrace of change, letting go, and loss [51, 52]. In the “spiritual model” of aging outlined by Leder, aging itself can awaken a time of profound meaning in the lives of older, frail adults: “the very losses of aging can be recontextualized as modes of liberation. They awaken us to what was insubstantial in our previous lives. They allow the time and focus to re-form the self” [51]. In this regard, frailty need not always be associated with that which is fragile and/or broken: rather, individuals can be strengthened by meeting the challenges of a frail body. Our findings provide examples for language that could help communicate a more positive and holistic concept of frailty, such as frailty as “a lens, through which differences can be appreciated” [42]. Given a lack of evidence regarding what older adults know or want to know about frailty, this may offer an interesting new model to discuss some of the more positive, reflective aspects of aging and frailty.

The word “frailty” has given rise to many connotations, as depicted by the variety of figurative language found in this review, and evinced by the numerous definitions of frailty in the literature [45]. This conceptual confusion about frailty has likely contributed to the proliferation of definitions and assessment instruments, as well as a variety of figurative expressions. The multiplicity of definitions has arguably hampered progress in research and clinical translation, especially by creating uncertainty about how to optimally assess frailty, and by conflating findings when frailty is measured with different instruments without consideration of the differing components of each assessment method. Also troubling, the terms “frail” and “frailty” continue to be used in research as catch-all adjectives for decline or old age with no specific meaning provided [4]. Therefore, the use of the term and the figurative language used to characterize “frailty” must be done with thoughtfulness and precision; otherwise, alternative terms to capture the notion of critical declines in age-related

physical and cognitive functions may be warranted. The following passage reinforces this idea:

“A new metaphor dramatically shifts perceptions of aging... by comparing the process of aging to building momentum, researchers as communicators can open a new way to thinking and talking about aging—something counter to currently available cultural idioms such as “fighting” aging or the importance of “staying young.” An innovative test of how messaging can affect people’s implicit associations showed that this metaphor reduced ageist attitudes by a remarkable 30%.” [48]

This supports the need for being more thoughtful about how we use figurative language to describe frailty. There appears to be room for improvement based on some of the metaphors identified, e.g., “rickety cars”, “lost tribe”, or frailty as a “testimony to... eventual death”.

In reviewing figurative language used to describe frailty in editorials, we identified categories that represent issues facing frailty research. Figurative language allows one to “test” concepts by using real-world comparisons; and it offers communication pathways that can function across disciplines. Creative comparisons that elucidate key problems facing the field may provide insights into evolving areas of frailty research and potentially point toward solutions to the lingering questions of how to meaningfully communicate about frailty. Frailty characterized as an opportunity for self-awareness and reflection is one such novel model of communication that merits serious consideration.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.
Systematic literature search for editorials on frailty

Table 1

Figurative language used to describe frailty, organized by six categorical purposes of use

Author(s)	Journal	Year	Figurative language, in bold, used to describe frailty (type of figurative language)
Category 1: Frailty as a complex, multifaceted concept			
Bortz W	J Gerontol A	2010	"Like the weather, the Internet, and even health, frailty resists facile measurement and definition" ... "As such, frailty, like the weather, Internet, and health, qualifies as an emergent construct " (Simile)
Cesari M	J Nutr Health Aging	2011	"The multidimensionality of frailty: many faces of one single dice ." Note: title only. (Metaphor)
de Grey A	Rejuven Res	2008	Myth of Eos and Tithonus used to address controversy of extending life expectancy but possibly leaving older adults in an extended frail state, versus extending healthy years of life. The author critiques this myth as being erroneously used to justify a turn away from biological advances that focus on a primary goal of extending life span. (Allegory: the myth of Eos and Tithonus)
Ferrucci L, Mahallati A, & Simonsick EM	J Gerontol A	2006	"In the land of frailty, confusion, contradiction, and ambiguity reign supreme ." (Metaphor)
Ferrucci L et al.	J Gerontol A	2006	"Although we praise this approach [of validating the frailty phenotype], our gerontological souls are still bleeding ." (Metaphor)
Ferrucci L et al.	J Gerontol A	2006	From Greek myth : "it is through 'foolishness,' or forgetfulness, rather than necessity, that living long becomes associated with frailty" (Allegory: the myth of Eos and Tithonus)
Fried LP, Varadhan R, & Bohr VA	Mech Ageing Dev	2008	Approaches toward study underlying causes of frailty "will begin to make the figure in the stone visible ." Analogy (to Michelangelo and sculpting))
Pagani L	Clin Microbiol Infect	2015	Asserts that there is no "one size fits all" frail individuals plan. (Metaphor: idiomatic phrase)
Rockwood K	J Amer Geriatr Soc	2014	Comparing preparing for war to caring for frail patients: "Geriatric medicine and counterinsurgency: what can we learn about combating frailty ?" ... "The complexity of frailty is an insurgency that undermines a strategy of aiming at the "chief complaint" and "most-responsible diagnosis." ... "Procedures can amount to destroying whole city blocks on rumors of an insurgent in one building." (Analogy: extended metaphor to war)
Rockwood K & Hubbard R	Age Ageing	2004	"Viewing frailty, like beauty , as a subjective and imprecise concept." (Simile)
Subbe CP & Jones S	Age Ageing	2015	"One would struggle to predict the future traveling speed of a car at a red light based only on the characteristics of the car and the driver while ignoring the rest of the traffic. Similarly, it is challenging to predict risk of frail patients without data on the speed and steepness of their decline over time." (Analogy: to predicting automobile speed)
Vidal EI de O	Cad Saude Publica	2014	"Prior to the emergency of the concept of frailty that heterogeneity was mostly understood in terms of functional status, degrees of dependency versus independency and comorbidities. It was almost as if the whole underwater part of the iceberg of aging had been disregarded – where subclinical physiological changes that decrease the ability to maintain homeostasis when facing different stressors hide." (Metaphor)
Witham MD & Sayer AA	Euro Geriatr Med	2015	But isn't resilience merely the mirror-image of frailty , with frailty being a lack of resilience? Although the concepts are closely linked, and likely have significant areas of overlap, it may not be the case that all those are poorly resilient are frail, or that all those who are frail lack resilience." (Metaphor)
Yates FE	J Amer Geriatr Soc	1993	"Cooking a goose requires an oven with a sharply defined and assured thermal potential; too little or too much ruins the feast. So it seems that there is some issue of scale involved. The question then becomes: <i>What is the scale of coupling to environmental potentials for energy and matter fluxes in support of physiological activities that is optimal at different "times of life?"</i> Bortz takes the view that frailty of the elderly is more likely to result from too little coupling rather than from too much. Have we any guidelines here?" (Analogy: to cooking)
Category 2: Frailty as an important issue in health and medicine			

Author(s)	Journal	Year	Figurative language, in bold, used to describe frailty (type of figurative language)
Conroy S & Chikura G	J Nutr Health Aging	2009	"Frailty is a major challenge facing the world as we move into the 21st century. But it is much like the fabled Holy Grail – something that we desperately want to get hold off, but can't quite grasp. " (Allusion: to religious symbol)
Hayes N	Nurs Older People	2016	"Identifying frailty and applying comprehensive geriatric assessments (CGAs) are the cornerstones of contemporary health care for older people..." (Metaphor)
Hubbard RE & Theou O	Age Ageing	2012	"Frailty as the Holy Grail of geriatric medicine." (Allusion: to religious symbol)
The Lancet Diabetes & Endocrinology Editors	Lancet Diabetes Endocrinol	2014	"This ['vast multimorbid, frail , dependent population living amid younger generations whose mobile lifestyles make them poorly placed to care for dependent relatives'] public health time bomb has already detonated in Western Europe, and rapidly industrialising countries could well follow a similar path." (Metaphor)
Category 3: Frailty as indicating something that is failing or faulty			
Dobbels F, Mauthner O, Milisen K	J Heart Lung Transplant	2014	"When more evidence becomes available, the question whether or not to put a new motor in a rickety car running out of gas will undoubtedly be the subject of further debate. " Motor = left ventricle assistive device; rickety car = frail elderly. (Analogy: to automobile repair)
Gadow S	Gerontologist	1983	"[Rationalist view]: the flesh is the frail, the irrational, the transient. The experience of frailty is the testimony to finitude, imperfection, and eventual death" (Metaphor)
Category 4: Frailty as indicating fragility			
Ebersole PR	Geriatr Nurs	1998	"The [life course] path continues to narrow until, very late in life, the journey more often resembles balancing on a tightrope than walking a comfortable and well-worn path. " (Analogy: to acrobatic balance)
Speir A	J Thorac Cardiovasc Surg	2015	" Parchment-like skin " (Simile)
Speir A	J Thorac Cardiovasc Surg	2015	"Fragility resides at the same address as frailty. For those of us who saw the results that occurred when we knocked one of our mother's porcelain figurines off of the table onto the floor, usually more than once, we knowingly can anticipate the same results from surgical intervention in some of our frail and fragile patients. " (Analogy: to fragile object)
Category 5: Frailty as representative of vulnerable but ignored persons			
Butler R & Hyer K	J Am Geriatr Soc	1989	"Complex frail elderly patients will continue to be a footnote in a system purporting to meet their health care needs." (Metaphor)
Chochinov HM & Stienstra D	Palliat Support Care	2012	"But as for vulnerable people, they somehow seem to be missing from the medical radar. " (Metaphor)
Chochinov HM & Stienstra D	Palliat Support Care	2012	"For some, vulnerability is a cage , which traps them inside of their bodies and the all too confining perceptions of others." (Metaphor)
Crotty M & Ratcliffe J	Age Ageing	2011	"Nursing home residents ["Some of the frailest members of our community"] were evocatively described as the 'lost tribe' by Stott et al. (2008), wandering outside the main health and research systems. If health professionals will not go to nursing homes, perhaps, it's time to lead this 'lost tribe' to the heart of health professional training and ask the universities to move their campuses. (Metaphor)
Richardson K & Hopker J	Anaesthesia	2016	"Frailty has recently be described as ' the elephant in the operating room ', as it is often not diagnosed or treated peri-operatively" (cited: Hubbard & Storey, 2014) (Metaphor: idiomatic phrase)
Category 6: Frailty as an opportunity for self-awareness and reflection			
Chochinov HM & Stienstra D	Palliat Support Care	2012	"For others, it is a lens , through which differences can be appreciated and diversity embraced." (Metaphor)
Chochinov HM & Stienstra D	Palliat Support Care	2012	"Although it might be too much to ask, perhaps you might want to consider vulnerability as a mirror. In seeing your own reflection, you may discover that, similarly to that of your patients, your path is no less fragile, no less tenuous, and no less uncertain." (Simile)

Author(s)	Journal	Year	Figurative language, in bold, used to describe frailty (type of figurative language)
Gadow S	Gerontologist	1983	"Physical frailty is simply one of the many colors that an existence will have, and an especially strong color at that , neither black nor white, and certainly not grey." (Metaphor)
Gadow S	Gerontologist	1983	"frailty is at once a limit and a freedom—the freedom to lavish all of one's intensity upon the creation of a new self-body relation in which the body is not a mere object but a subject, a beloved whose so-called imperfections are an essential part of the whole." (Metaphor)