Frailty : Update on Diagnosis Evaluation and Management Part 2

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ABSTRACT

Life expectancy continues to rise globally. However, the additional years of life do not always correspond to years of healthy life, which may result in an increase in frailty. Given the rapid aging of the population, the association between frailty and age, and the impact of frailty on adverse outcomes for older adults, frailty is increasingly recognized as a significant public health concern. Early detection of the condition is critical for assisting older adults in regaining function and avoiding the negative consequences associated with the syndrome. Despite the critical nature of frailty diagnosis, there is no conclusive evidence or consensus regarding whether routine screening should be implemented. A variety of screening and assessment instruments have been developed from a biopsychosocial perspective, with frailty defined as a dynamic state caused by deficits in any of the physical, psychological, or social domains associated with health. All of these aspects of frailty should be identified and addressed through the use of a comprehensive and integrated approach to care. To accomplish this goal, public health and primary health care (PHC) must serve as the fulcrum around which care is delivered, not just to the elderly and frail, but to all individuals, by emphasizing a life-course and patient-centered approach centered on integrated, community-based care. Personnel in public health should be trained to address frailty not just clinically, but also in a societal context. Interventions should take place in the context of the individuals' environment and social networks. Additionally, public health professionals should contribute to community-based frailty education and training, promoting community-based interventions that assist older adults and their caregivers in preventing and managing frailty. The purpose of this paper is to provide an overview of frailty for a public health audience in order to increase awareness of the multidimensional nature of frailty and how it should be addressed through an integrated and holistic approach to care.

Key words: frailty, evaluation, management

Background

With age, frailty becomes a more prevalent health problem. Frailty is prevalent in community-dwelling older adults at a rate ranging from 4.9 percent to 27.3 percent worldwide, reaching 50% in those >80 years of age (1). As a result, frailty is becoming a more critical factor for physicians to consider when caring for elderly patients. This paper discusses how to diagnose frailty in a variety of healthcare settings.

The Comprehensive Geriatric Assessment (CGA) is currently used to assess frailty in elderly patients (2). This is a multifaceted, multidisciplinary diagnostic procedure aimed at identifying a variety of medical, functional, and psychological problems in elderly patients. The objective is to develop a care plan. By converting qualitative elements to quantitative elements, the procedure enables the measurement and analysis of a complex situation (that of the frail elderly person) (scores). The CGA's utility is well established: when combined with targeted action, it improves patients' functional state (3) and cognitive performance (3,4), reduces medical costs (5,6), hospital utilization, and the number of institutional placements (4). However, the effects on mortality are debatable (4). Numerous studies have demonstrated the beneficial effects of this type of evaluation in primary care (7-9). The CGA's utility appears to be well established. The element that appears to be discriminatory is the way health-care interventions are organized around the elderly patient. Several organizational models are being tested following the screening and assessment of frail elderly patients. The preliminary findings are encouraging (10).

Although there is no universally accepted operational definition of frailty, two conceptual models dominate the field: the Frailty Index (FI) (11) and the Frailty Phenotype (FP) (12). Frailty is defined as a state by the FI as an accumulation of deficits over time. The FI's deficits encompass a diverse range of physical and psychosocial conditions and diseases (1). Frailty is defined by the FP as a syndrome defined by a predefined set of five criteria: involuntary weight loss; exhaustion; slow gait speed; inadequate handgrip strength; and sedentary behavior. (12).

A common feature of frailty tools is that they take biological age into account rather than chronological age alone. This is consistent with the biopsychosocial model of primary care, and its application may aid in identifying those at increased risk of negative outcomes and promoting equity of access to services (13). The frailty model's ability to capture risk and biological age in this manner has pushed the boundaries of care for the most vulnerable members of a population. This advancement, combined with the increasing prevalence, has prompted international consensus guidance to recommend frailty screening during routine clinical encounters (14,15).

Frailty Identification

Frailty is not a natural part of aging; it is a chronic condition similar to diabetes or Alzheimer's disease. Frailty should be recognized in order to improve outcomes and avoid unwarranted harm. Identifying people who are frail can aid in improving outcomes for both specific interventions and long-term management of health needs. Simple tests can be used to detect frailty, but should always be followed by a more detailed clinical assessment.

The central issue with frailty is the possibility of serious adverse consequences following an apparently minor stressor event or change. The severity of frailty varies (individuals should not be labelled as being frail or not frail but simply that they have frailty). Individuals' frailty states are not static; they can improve or deteriorate. Any interaction between an older person and a health or social care professional should include a frailty assessment.

Frailty is frequently reversible, at least in its early stages, prior to the onset of functional impairment (16). Thus, early identification, typically during the pre-frail stage (17), is critical for assisting individuals in regaining function and avoiding adverse outcomes associated with the syndrome. Despite the critical nature of frailty diagnosis, there is no conclusive evidence or consensus regarding whether screening should be implemented routinely in various settings, whether an age threshold should be established (18), or which domains should be investigated (19). Indeed, there is scant evidence to support the use of primary healthcare services for frailty screening, surveillance, or monitoring at the population level (20). Despite this, the Royal College of Physicians, the French Society of Geriatrics and Gerontology (21,22), and the British Geriatrics Society (8) all advocate for opportunistic or targeted frailty screening. Numerous brief instruments exist to screen for and assess frailty, but no consensus on how to define frailty exists, limiting our ability to quantify it (16, 23,24). Given the syndrome's multidimensional characteristics, a variety of instruments with varying features have been validated and can be used in a variety of clinical settings. Among these instruments, some are designed solely for the purpose of detecting physical frailty, while others have a broader scope (Table 1). The primary limitation of all of these instruments is that they make no recommendation for intervention based on their score.

Frailty screening

Currently, the Comprehensive Geriatric Assessment (CGA) is considered the gold standard for frailty assessment (26). However, it was not designed for this purpose and may not accurately reflect frailty, as its original purpose was to detect disability (12). As a result, a modified CGA may be more useful in identifying frailty (8, 13). CGA is critical for developing tailored interventions, despite the fact that it is time consuming and requires specialized input. PHC may be the optimal location for frailty screening (23). To this end, it is necessary to emphasize the importance of PHC physicians and specialists receiving appropriate training on how to detect frailty (15), in order to conduct appropriate frailty screenings (16). There are an increasing number of examples of healthcare professional education programs on frailty (16). These are backed up by interprofessional learning guidelines, which are critical to frailty education (17). For instance, in Ireland, the National Frailty Education Program, which aims to educate a broad range of healthcare professionals across all healthcare settings about the fundamentals of frailty, was successfully implemented (18). There is a need for a similar approach in other countries

Table 1: Selection of frailty screening and assessment instruments comparing uni- and multi-dimensional scales

Unidimensional	Multi-domain and multidimensional
Frailty Phenotype	Frailty index
Gait Speed	Clinical Frailty Scale
Timed-Up-and-Go Test	Groningen Frailty indicator
INTER-FRAIL	Edmonton Frail Scale
Short Physical Performance Battery	Gerontopole Frailty Screening Tool
Frail scale	Frail Elderly Functional Assessment
	Prism-7-Questionaaire
	Kihon Checklist
	Tiburg frailty index
	Comprehensive Frailty Assessment Instrument

Table 2-Prism 7 Questions

1- Are you more than 85 years?
2- Male?
3- In general do you have any health problems that require you to limit your activities?
4- Do you have someone to help you on a regular basis?
5- In general do you have any health problems that require you to stay at home?
6- In case of need, can you count on someone close to you?
7- Do you regularly use a stick, walker or wheelchair to get about?

to equip healthcare professionals with the necessary skills and knowledge about frailty, as well as to ensure early detection and appropriate management of this condition.

There are a variety of tests available for determining frailty, but their accuracy is unknown. There are several straightforward tests for identifying frailty (e.g. walking speed, grip strength, and simple questionnaires) that can be used in conjunction with a phenotype model, cumulative deficit model, or comprehensive geriatric assessment.

PRISMA 7 Questionnaire - a seven-item questionnaire used in previous frailty studies that is also suitable for postal completion. A score of greater than three is considered to indicate frailty.

Walking speed (gait speed) - Gait speed is typically expressed in meters per second and has been measured in research studies over distances ranging from 2.4 to 6 meters. Gait speed was measured over a 4-meter distance in this study.

The timed up and go test (TUGT)- determines the time required to stand from a standard chair, walk three metres, turn, walk back to the chair, and sit.

Self-Reported Health - which was assessed in the study by asking participants to rate their health on a scale of 0-10. Frailty was defined using a cut-off of less than 6.

GP assessment - in which a GP determined whether a participant was frail or not based on a clinical examination.

Multiple medications (polypharmacy) - a condition in which a person is considered frail if they take five or more medications.

The Groningen Frailty Indicator questionnaire - a 15-item questionnaire on frailty that can be completed via mail. A score of greater than four indicates the possibility of moderate-severe frailty.

Frail Questionnaire- The five-item Fatigue, Resistance, Ambulation, Illnesses, and Weight Loss (FRAIL) questionnaire has been extensively validated throughout the world (20). The FRAIL questionnaire used the term "illness" rather than the Fried frailty phenotype's physical inactivity.

Frailty Phenotype Questionnaire- Kim et al., (27) developed a five-item questionnaire (The Frailty Phenotype Questionnaire) to detect the Fried frailty phenotype accurately. The new questionnaire demonstrated acceptable diagnostic accuracy for the Fried frailty phenotype (area under the curve=0.89), as well as a high sensitivity (81.7 percent) and specificity (88.7 percent) (82.5 percent). (27). As with the Fried frailty phenotype, those scoring "0" on the Frailty Phenotype Questionnaire are considered robust, those scoring 1 or 2 are considered pre-frail, and those scoring 3 or more are considered frail.

Discussion

While several definitions of frailty exist, they do not yet assist in operationalizing the concept (16). Involving international experts from diverse backgrounds, including health and social care professionals, academics, and older adults, could be the first step toward achieving broad agreement on a definition. Additionally, no consensus has been reached on the dimensions that must be examined in order to arrive at an operational definition (20). Due to the heterogeneity of frailty definitions and the varied characteristics of frailty, the same person can be both frail and not frail, depending on the domains investigated. We argue that reaching consensus on an operational definition does not necessarily require finding a single definition that applies to all health and social care settings, but rather that all professionals, including public health professionals, must have a shared understanding and a multidimensional approach to defining and recognizing the condition. Contextual terms such as social frailty, nutritional frailty, physical frailty, and cognitive frailty may also be beneficial in increasing understanding of the frailty concept of vulnerability to adverse events (28,29).

At the moment, there is a dearth of data on frailty screening and assessment at the population level (18). Additionally, we argue that implementing population-level screening would necessitate upskilling existing staff and additional research evaluating the approach's effectiveness and cost-effectiveness in primary care and public health. Secondary care's role (e.g., hospital-based Geriatricians) and how it can complement community-based services must also be clarified. Identifying and labeling individuals as frail without a compelling reason to do so risks causing harm in and of itself. Defining a concept has an effect on how we identify it (30) and provides it with a clear meaning, which has ramifications in everyday life. Labeling people as frail may have ramifications for how society views and interacts with them (31). This may have an effect on how individuals view themselves and their role in society, as well as in the familial setting. It is critical that people feel valued and can participate fully in daily life, even when they are recognized as frail. To accomplish this goal, society must foster environments that enable frail people to feel socially engaged while minimizing social stigma. As a result, frailty affects not only health-care services, but also social services and communities as a whole. Additionally, there is a need for improved communication between individuals with frailty and their supports in order to assist people in contributing in every aspect of life, regardless of their level of frailty. This is a critical approach to frailty that professionals in PHC and public health should strive to achieve. Additionally, communication with the public about frailty is necessary. It is critical to conduct public health campaigns emphasizing that this is a condition that is influenced by the life course. As it is critical to identify frailty early, we argue that additional frailty research involving individuals younger than 65 years old is necessary, as this will aid in identifying frailty in its earliest, prodromal stage, commonly referred to as pre-frailty (25, 32). Public health campaigns combined with interventions targeting pre-frail individuals may result in more favorable outcomes, as reserve capacities are still sufficient to maintain functional abilities at this stage (33).

Population-level interventions centered on education and utilizing a public health approach are also appropriate. Again, these interventions should begin early and focus on younger individuals before frailty sets in. Although the optimal strategy for frailty intervention is not yet clear, the biopsychosocial model is the most appropriate for providing a holistic assessment of the patient. Recognizing which domains (physical, cognitive, nutritional, psychological, social, and economic) contribute to function loss would serve as a proxy for health-care utilization and enhance the quality of patient-centered care (34), thereby favoring population-level targeted prevention and management strategies. Education is critical to ensuring that providers and older adults alike are well-positioned to benefit from these approaches. Evidence suggests that awareness of frailty's prevention and reversibility, or "malleability," is low (34); thus, in light of the world's aging societies and high rates of frailty in all countries (35), there is a need to raise awareness at all levels (i.e., micro, meso, macro). In this sense, frailty should no longer be confined to settings associated with geriatric medicine. For instance, the majority of healthcare specialties manage older adults with complex needs, which necessitates a broader understanding of the patient's overall health status (36), rather than a disease-specific approach. Additionally, even if impairment is detected in one domain, frailty's increased vulnerability puts individuals at risk for rapid deterioration in other domains as well. This requires prevention rather than reaction and the adoption of a person-centered, community-focused public health model. When caring for frail older adults, a holistic approach is necessary. Thus, public health personnel should be educated about the multifaceted nature of frailty, trained to identify it, and made aware that it is not just a clinical concept, but also a societal issue that can be addressed in an individual's environment and social relationships. Additionally, public health professionals can contribute to community-level education and training on frailty, fostering community-based interventions that assist older adults and caregivers in preventing and managing frailty. Similarly, policymakers must be more cognizant of the role of frailty and develop policies that promote seamless care for those with complex needs and enhance individuals' ability to self-manage (37). The importance of providing integrated care at the population-health level cannot be overstated (38). Care fragmentation makes it impossible to adequately address all facets of frail individuals' complex needs.

Socioeconomic inequalities have a significant impact on the development of frailty and on the outcomes of frail individuals. Frailty is typically associated with a lower socioeconomic status; frail individuals tend to be less educated and earn less money (12, 39). This demonstrates how social factors have a significant impact on health. Additionally, the absence of a shared assessment of environmental and social factors, which are reported infrequently in currently available multidomain frailty instruments, may contribute to a misleading approach to meeting the true needs of frail individuals and populations (40). Services must be able to intervene to address the social determinants of health, which are frequently overlooked, particularly in healthcare settings, as an integral part of an individual's well-being. Traditional health care systems, with their siloed structure and a strong hospital-centric, cure-first culture, must be refocused in order to adapt to populations' new complex and chronic care needs. To accomplish this, we must

implement the framework for reimagining healthcare around PHC that was outlined in 1978 in the Alma-Ata Declaration and reaffirmed in 2018 in the Astana Declaration (41). Public health, primary health care, and social services must be at the forefront of frail older adults' care management, promoting integrated care and a life-course approach to health. Intermediate care, which was developed to facilitate the integration of acute and post-acute care and to provide a breadth of health and social services to bridge care for older and frail adults with complex needs (42), may facilitate the management of frail adults' complex needs. It has been demonstrated that it has an effect on healthcare outcomes, including hospitalizations, though additional research, particularly at the population level, is required (43). Thus, while it has been asserted that "complex problems necessitate complex solutions" (44), we assert that complex needs necessitate holistic and integrated care.

Conclusion

Frailty affects a large number of older adults, and its prevalence increases with age. Frailty is a spectrum of severity, and certain interventions such as exercise that improves strength and balance, as well as addressing nutritional deficiencies, can help reduce it. Frailty refers to an individual's increased risk of suffering a negative outcome as a result of a minor change in their circumstances or health, and it is critical that health and social care staff recognize this.

Frailty can be recognized either as a result of the clinical condition with which the individual presents or as a result of an active search for it using gait speed, a timed up and go test, or a brief questionnaire.

Once frailty is recognized, the most effective management strategy is a comprehensive geriatric assessment. This includes a comprehensive medical examination and appropriate referral to other specialist disciplines (including geriatricians), as well as care and support planning. Each person living with frailty should have their own care and support plan, which should be shared with other health and social care professionals with whom they interact.

Thus, frailty assessment provides a theoretical framework within which primary care physicians can develop a systematic approach to assessing and treating elderly patients with complex multimorbidity. The importance of frailty measurement tools is bolstered by a global dearth of critical information and evidence about the elderly's health, which impedes the development and evaluation of appropriate policies and programs for them. Frailty measurements can provide useful information in general, but this requires the use of a valid instrument.

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