

# Influence of Gender on Perception of Frailty among Elderly

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## ABSTRACT

Frailty, which is a geriatric syndrome that affects 5% to 17% of older adults, is a state of increased vulnerability across multiple health domains that leads to adverse health outcomes. This review aimed to summarize the influence of gender on the perception of frailty among the elderly, as frailty is one of the most common problems which could be considered a geriatric syndrome. Frail older adults are at increased risk of falls, disability, hospitalizations, and death, many studies have shown that the incidence of frailty is more in elderly women. Women tend to have poorer health status and are frailer, but are more resilient and have longer life expectancy than men. This review found that factors associated with frailty differ by gender, where higher prevalence rates are higher among females and higher mortality in males.

**Keywords:** Frailty, geriatric syndrome, gender differences, robust, prefrail, and frail.

## INTRODUCTION

Frailty is a clinically recognizable state of increased vulnerability resulting from an aging-associated decline in reserve and function across multiple physiologic systems that results in decreased physiological reserve in multiple organs, causing limited capacity to maintain

homeostasis. It is broadly seen as a state of increased vulnerability and functional impairment caused by cumulative declines across multiple systems. <sup>[1]</sup> Frailty, commonly associated with aging, includes several characteristics, frail older adults are weak, often have many complex medical problems, have lower ability for independent living, may have impaired mental abilities, and often require assistance for daily activities (dressing, eating, toileting, mobility). Most frail older adults are women (partly because women live longer than men), are more than 80 years old, and often receive care from an adult child. <sup>[2]</sup>

Older people are often assumed to be frail or dependent and a burden to society, some believe aging is an illness and tend to ignore problems until they end up with chronic illnesses. The Elderly has to cope with health and associated problems which actually require constant attention to their disease problems and the contributing factors. <sup>[3]</sup> But due to a lack of facilities and neglect by the family, the elderly is often not able to maintain healthy lifestyles and their problem remains unidentified. This burdens their lives and leads to serious health problems. which further causes an

increased rate of frail elderly the incidence rate is more among women. [4]

Common conditions in older age include hearing loss, cataracts and refractive errors, joint pain, low back pain, urinary incontinence, chronic obstructive pulmonary disease, hypertension, diabetes mellitus, depression, and dementia. [4] Frail older adults are at increased risk of falls, disability, hospitalizations, and death. Frailty may initially be overlooked or incorrectly identified as part of the normal aging process because of the variable nature of the presentation and diagnosis. Frailty is not only a disease but is rather considered a syndrome requiring comprehensive and multidisciplinary care approach. It is an often-reversible pathological transitional stage between healthy aging and disability. [5]

Among elderly people, as a result of increased healthcare needs, frailty can be considered one of the healthcare cost drivers for the healthcare system. A variety of health conditions contribute to the development of frailty, including environmental factors such as physical activity or poor nutrition. There is no standard treatment of choice specifically for frailty, but there is a need for high-quality cost-effective healthcare strategies to counter frailty. [6] Maintaining healthy behaviors throughout life, particularly eating a balanced diet, engaging in regular physical activity, and refraining from tobacco use, all contribute to reducing the risk of non-communicable diseases, improving physical and mental capacity, and improving their health status.

### **RISK FACTORS FOR FRAILITY**

The estimated prevalence of frailty in the community setting is inconsistent in the literature, and the incidence is likely underreported.

Prevalence is hard to estimate because frailty is multifactorial, with older age, female sex, unhealthy lifestyle, and lower economic status identified as potential risk factors. [7]

Studies have revealed that age, gender (female), lower education, lower socioeconomic status, and minimum physical activity in routine work were independently associated with frailty. The prevalence of frailty among older people in the rural Thanjavur district of South India was high compared with low-income and middle-income countries. Understanding the modifiable determinants of frailty, steps can be taken to provide a valuable reference for future prevention and intervention. [10]

Social factors such as marital status, smoking history, social isolation, and lower levels of education also put people at risk. Research suggests that frailty increases with the number of health deficits and the presence of multiple comorbidities. Patients diagnosed with diabetes mellitus, respiratory disease, stroke, dementia, multiple sclerosis, connective tissue disease, osteoarthritis, and chronic fatigue syndrome have higher documented frailty rates. [7]

### **GENDER DIFFERENCES IN FRAILITY AMONG ELDERLY**

Many researchers have done a study on the prevalence and associated factors of frailty among the elderly, a study was done among 1806 Thai older persons aged 60 years or older using Fried's frailty phenotypes, in which the result shows the prevalence rate of frailty, pre-frailty and non-frailty were 13.9%, 50.9, and 35.1%, respectively. Increasing age, lower education, having no spouse, poorer health perception, an increasing number of comorbidities, osteoarthritis, and smaller mid-arm circumference increased the risk of frailty. [8]

Determinants of frailty in the absence of disability were identified among older adults in rural areas of Nepal using a generalized estimating equation (GEE) where the result shows 65% of the participants self-reported the presence of frailty in the absence of disability and prevalence of frailty in the absence of disability was high among rural community old population residence. [9]. Studies have

shown that the overall prevalence of cognitive frailty in the older population ranges from 0.72% to 50.10%, with 0.72% to 39.70% in Europe and the US and 0.76% to 50.10% in Asian populations [10]. Factors associated with frailty differ by gender, with a higher prevalence rate among females and higher mortality in males. [12]

There are gender differences in frailty transition rates, patterns, and prediction, men worsened more often and those who were already frail died more often than women This shows the importance of considering gender when addressing frailty and targeting interventions in old age. [11]

Prevalence and transitions of frailty among older adults show that the increase rate was seen higher in women compared to men. Women reported a significantly higher prevalence of

low physical activity and weakness, but the prevalence of weight loss, exhaustion, and slowness showed no significant difference between men and women in one study. [12]

Women aged between 45 years and 79 years had a higher mean frailty index and a higher

prevalence of frailty than did men. [13]

Gender-stratified prediction models for frailty transition demonstrated that some predictors (age, self-rated health, cognitive impairment, baseline frailty status) were included in all models. While stroke, diabetes mellitus, smoking, and glomerular filtration rate were unique predictors in the models for females, osteoarthritis, hospitalization, and education were predictors in the models for males. [14]

The increase rate was seen higher in women compared to men. Being frail was significantly associated with older age, women, and respondents with a higher number of chronic diseases, poor cognitive function, and low socioeconomic status. Frail participants were older, more likely to be women, single or widowed, had lower education levels, poor social support, low income, and lower cognitive function than those who were not frail. They also were reported to have a higher number of chronic diseases with the majority having two or more. [15]

### SCALES TO MEASURE FRAILITY [16]

Frailty assessment scale	Short description
The FRAIL	fatigue, resistance, aerobic, illnesses, loss of weight
The Cardiovascular Health Study Frailty	weight loss, exhaustion, low activity, slowness, weakness
The SHARE Frailty Instrument (SHARE-FI)	exhaustion, weight loss, handgrip strength, slowness, low activity
The SHARE Frailty Instrument (SHARE-FI)	fatigue, low appetite, weakness, and slowness.
interRAI home care frailty scale	29 assessment items; the areas of function, movement, cognition and communication, social life, nutrition, and clinical symptoms
Study of Osteoporotic Fractures (SOF) frailty scale	weight loss, reduced energy level, inability to rise from a chair, reduced energy level
Tilburg Frailty Indicator (TFI)	Sociodemographic characteristics of a participant. The physical domain: physical health, unexplained weight loss, difficulty in walking, balance, hearing problems, vision problems, strength in hands, and physical tiredness. The psychological domain: cognition, depressive symptoms, anxiety, and coping. The social domain: living alone, social relations, and social support.
Easycare Two-step Older Persons Screening (Easycare-TOS)	14 questions about the functioning of the patient in somatic, psychological, and social domains
Frailty Index (FI)	includes 40 variables
Groningen Frailty Indicator	15 self-report items and screens for loss of functions and resources in four domains: physical, cognitive, social, and psychological
Short Physical Performance Battery (SPPB)	balance, 4-meter gait speed, and chair stand test
Edmonton frail scale	cognitive impairment, health attitudes, social support, medication use, nutrition, mood, continence, functional abilities
Frail scale status	fatigue, resistance, ambulation, illness, and loss of weight
Gerontopole frailty screening tool (GFST)	The first 6 questions evaluate the patient's status (living alone, involuntary weight loss, fatigue, mobility difficulties, memory problems, and gait speed), whereas the last two assess the general practitioner's personal view of the frailty status of the individual and the patient's willingness to be referred to the Frailty Clinical for further evaluation.

SEGA grid	functional decline, including age, provenance, drugs, mood, perceived health, history of falls, nutrition, comorbidities, IADL, mobility, continence, feeding, and cognitive functions
Strawbridge questionnaire	two or more functional domains (physical, cognitive, sensory, and nutritive).
Frailty phenotype	unintentional weight loss (10 lbs in the past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity

## STRATEGIES TO REDUCE THE BURDEN FOR FRAIL ELDERLY

Specific care plans for frailty have not yet been extensively developed or tested. Despite this, there are emerging strategies that can be utilized to help mitigate the daily impact of frailty on quality of life and overall health status.<sup>[17]</sup>

### 1. ESTABLISHING GOALS OF CARE

Goal-setting with patients and their families is crucial in providing care for the frail individual, establishing individual priorities, weighing the risks and benefits of interventions, and making decisions regarding the aggressiveness of care. Comprehensive geriatric assessment (CGA) may help guide the development of management and intervention plans for frail patients. Comprehensive geriatric assessment (CGA) is defined as a multidisciplinary diagnostic and treatment process that identifies the medical, psychosocial, and functional limitations of a frail older person in order to develop a coordinated plan to maximize overall health with aging.<sup>[17]</sup>

### 2. EFFICACY

A variety of interventions, particularly those including exercise, appear promising in the prevention or reduction of frailty.<sup>[17]</sup>

### 3. EXERCISE

The benefits of exercise in older adults include increased mobility, enhanced performance of activities of daily living (ADLs), improved gait, decreased falls, improved bone mineral density, and increased general well-being. Studies suggest that even the frailest older adults are likely to benefit from physical activity at almost any level that can be safely tolerated.<sup>[17]</sup> Studies suggested that exercise has a positive effect on various measures used to determine frailty including cognition, physical functioning, and psychological well-being.<sup>[18]</sup>

### 4. OCCUPATIONAL THERAPY

In addition to exercise, formal occupational therapy has been helpful, particularly in patients with difficulties with ADLs. Compared with the baseline, a meta-analysis of home and community-based occupational therapy for frail older adults showed moderate improvements in the ability to perform ADLs, in social participation, and in mobility.<sup>[17]</sup>

### 5. NUTRITIONAL SUPPLEMENTATION

For patients with weight loss as a component of frailty, attention should be focused on medication side effects, depression, difficulties with chewing and swallowing, dependency on others for eating, and use of unnecessary dietary restrictions (low-salt/low-fat). The consumption of moderate to large servings of high-quality protein or a high-quality protein meal plus exercise has been shown to stimulate muscle synthesis. Based on the estimated energy and protein needs of frail older adults, it may be beneficial to offer nutritional supplements between meals, especially when they are exercising.<sup>[19]</sup>

### 6. MEDICATION REVIEW

Periodic evaluation of a patient's drug regimen is an essential component of medical care for an older person, and it is especially important for patients who are pre-frail or frail. Several hormonal and nutritional interventions have been evaluated in related geriatric conditions. Testosterone replacement increased muscle mass and strength in hypogonadal and eugonadal men, especially in combination with exercise.<sup>[17]</sup>

## DISCUSSION

Strategies for preventing or delaying the installation of frailty need to address gender differences, considering the greater complexity of the network determinants among women. None of the assessment

scales examined are used as the gold standard for primary care. A variety of tools are being used in clinical practice to assess frailty in elderly patients, highlighting the need for standardization and guidelines. This requires evaluating the current assessment scales in terms of validity and reliability, and suitably improving them. There are gender differences in frailty transition rates, patterns, and prediction. This supports the importance of considering gender when addressing frailty and targeting interventions in old age. This review suggests that the risk of developing frailty and prefrailty is high among older adults; as such, appropriate interventions can be provided by effective use of assessment tools for frailty and applying different management techniques in their daily clinical practice. It will facilitate and inspire the nurse researcher to carry out further research work in various aspects of geriatric problems and emphasizes orienting nurses on different tools for the assessment of frailty in their routine care.

## CONCLUSION

Among elderly people, and due to increased health care needs, frailty can be considered one of the health care cost drivers for the health care system. A variety of health conditions contribute to the development of frailty, including environmental factors such as physical activity or poor nutrition. Maintaining healthy behaviors throughout life, particularly eating a balanced diet, engaging in regular physical activity, and refraining from tobacco use, all contribute to reducing the risk of non-communicable diseases, improving physical and mental capacity, and improving their health status.

### **Declaration by Authors**

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