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## The Intersection of Physical and Social Frailty in Older Adults

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### Abstract

Frailty, a vulnerability to stressors, has been increasingly woven into the clinical understanding of older people who are unable to respond to the impact of diseases, disability, and age-related decline. While the literature has focused on physical frailty, social frailty has been conceptualized within the domains of social needs (social and emotional support, loneliness), resources (income, food, housing, medical care, etc), social fulfillment (engagement in work and activities), and self-management (cognitive function, mental health, advance planning). This review outlines the

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assessment of the four domains of social frailty within the structure of clinical visits, particularly annual wellness and advance care planning. Increasing connectivity with the community, health system, and government support is the primary recommended intervention. On a policy level, expanding opportunities to connect socially frail people with resources may help mitigate the vulnerability of physical frailty.

### Keywords

frailty; physical frailty; social frailty

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## INTRODUCTION

Frailty decreases resiliency and reserves, which renders people vulnerable to the stress of disease, disability, or social change. Physical frailty has dominated medical literature for the past 20 years. With prevalence estimates of up to 45% among adults 85 years or older,<sup>1</sup> physical frailty increases the risk of low functional status, hospitalization, and mortality.<sup>2</sup> Despite its high prevalence, physical frailty is not a normal process of aging, and many have postulated that frailty can be prevented or treated.<sup>3</sup>

Over the past two decades, physical frailty measurements have emerged: 1) the clinically favorable frailty phenotype and 2) the data-focused frailty index (accumulation of deficits). The phenotype of frailty by Fried et al. (2001) includes five criteria: weight loss, reduced activities, grip strength, gait speed, and exhaustion. Clinically, the objective measurement of the frailty phenotype is possible within the context of an office visit and is billable, starting in 2021, with the R54 ICD-10 code. In contrast, the frailty index presents a model of deficit accumulation.<sup>4</sup> With the breadth of comorbidities, disabilities, and age-related decline, each additional deficit results in the patient being less able to rebound from stressors. For example, a patient with many comorbidities, including dementia, is going to be less able to rebound from the stress of acute hospitalization. Frailty indexes incorporate clinical information, such as that from an assessment of function, cognition, depression, physical ability, and comorbidities. For clinicians with access to electronic medical record data, the frailty index can be calculated with fields completed in the course of clinical care.

### The social frailty gap

In examining the fundamental definition of frailty – a decrease in resiliency and reserves, clinicians invariably recognize that numerous social factors beyond those contributing to the phenotype of frailty index definitions play a substantial role in patient function. For example, if a person lacks financial resources for food (a socially-anchored process), solely capturing strength loss in the physical frailty phenotype does not account for social factors that may be largely responsible for frailty in nonphysical domain. Thus, there is a gap in the narrow definitions of physical frailty that does not include the broader perspective of social frailty – a gap that has clear ramifications for improving patient care, and even potentially mitigating negative outcomes. Therefore, social frailty should be considered in concert with broader frailty definition. Social frailty has been defined as a progressive loss of resources, activities, or the ability to participate in social activities to fulfill basic social needs.<sup>5</sup>

Social frailty often manifests with clinical stressors such as the response to a new diagnosis or acute hospitalization, when the system supporting the patient may get overwhelmed or break down. Other symptoms of social frailty include limited social support, a smaller social network, poor living conditions, fewer socially-oriented leisure activities, and risk of losing resources.<sup>5</sup> Other features may include unhealthy social behaviors (lack of physical exercise, poor diet, alcohol use, and smoking), social isolation, and loneliness.<sup>5</sup> Social frailty is a broad but highly medically relevant construct. Yet, clinical tools for identifying social frailty remain elusive.

The purpose of this article is to describe the intersection of physical frailty and social frailty and utilize existing social frailty literature to describe a framework for building a clinical checklist of social frailty.

### **The social frailty framework: measurement and integration into care and treatment**

Figure 1 highlights the intersection of physical and social frailty. This intersection is influenced by biological, psychological, social, and environmental factors. Prior systematic reviews of social frailty have developed a framework of four social frailty domains<sup>5</sup> including 1) social needs; 2) general resources; 3) social fulfillment; and 4) self-management to provide a more comprehensive view of the system supporting people living with frailty. Social needs encompass social and emotional support. General resources include life essentials such as housing, food, water, air, and income. Social fulfillment describes a person's ability to interact and engage in activities that allow survival and thriving. Self-management is the autonomous component of social frailty that includes self-determination and motivation necessary to achieve equilibrium among the other social frailty domains and potentially avoid physical frailty.

This conceptual framework of social frailty is based on a combination of different theories including: 1) Loneliness Theory,<sup>6</sup> which refers to an individuals' social network and relationships being less satisfactory than expected; 2) The convoy theory of social relations,<sup>7</sup> which refers to individuals receiving social support throughout their life by members of their cohort; 3) Self Determination Theory,<sup>8</sup> which refers to the status of motivation or autonomy and control, and 4) Social Production Functions Theory,<sup>9</sup> which refers to individuals who maximize their psychological and environmental factors or resources for physical and social well-being.

Table 1 describes the relationship between social frailty domains and physical frailty. An analysis conducted by Woo et al. in 2005 found that increasing social support was associated with lower frailty.<sup>10</sup> Weight loss from physical frailty phenotype, has been associated with the resource domain of social frailty (occupation, race, gender, and educational level, neighborhood deprivation, and individual socioeconomic status).<sup>5,11</sup> The social fulfillment domain highlights that components of frailty such as exhaustion can be associated with depression and slow gait speed leading to reduced social engagement.<sup>5,10</sup> Similarly, the self-management domain has a strong relationship with cognitive function and can be associated with weakness, resulting from reduced exercise and poor disease management among people with cognitive impairment.<sup>5,11</sup>

### **Clinical recommendations for integrating frailty and social frailty into treatment**

Incorporation of yet another assessment into an already busy clinical practice has potential to benefit patients with physical frailty, but should be accomplished with an eye toward minimizing additional clinical burden. There are components of social frailty that could be built into pre-visit assessments, annual wellness visits, advance care planning, or pre-procedure shared decision making. The purpose would be to facilitate clinical responses when stressors affect the social infrastructure of a patient, rather than simply rote completion of assessment fields. This approach emphasizes that medicine is within the control of the provider.

Table 2 presents a framework for a social frailty checklist with example measures based on a multi-component model of social frailty that includes social isolation, loneliness (social needs), social exercise and participation (social fulfillment), housing, food (resources), behavior, and motivation (self-management). The checklist identifies key elements of social frailty (but is not comprehensive), assessments of the element, and clinical opportunities to complete the assessment. This checklist may assist providers and multidisciplinary teams in coordinating evaluation at the early stages of frailty or addressing frailty in older adults.

### **Clinical research directions**

While the physical frailty phenotype has dominated the medical literature, the study of social frailty is less developed.<sup>4</sup> The demonstrated association of physical frailty and adverse health outcomes with biological underpinnings strongly suggests that the conceptualizations of physical frailty are appropriate. However, the lack of incorporation of social domains suggests that the overall concept of frailty needs reconsideration. Recent research has systematically examined the association of physical frailty with elements of social frailty domains.<sup>11</sup> Additional work is needed to target interventions in social frailty domains using existing infrastructure (e.g., meals on wheels, home, and community-based services, etc.) to determine if modifying social frailty can impact physical frailty. While pharmaceuticals may address biological deficits, larger-scale interventions are necessary to influence social determinants. Fortunately, social support programs could permit or encourage such interventions (e.g., Meals on Wheels, Program of All-Inclusive Care of the Elderly, VA Homeless Programs, State Medicaid home, and community-based services, etc.). Finally, the breadth of social frailty is beyond the ability of a single provider to overcome all aspects. As a result, physicians, providers, researchers, and policymakers should collaborate to find innovations to social frailty that span health systems, social support agencies, and government services.

## **CONCLUSIONS**

Social frailty contributes to reduced resiliency and ability to maintain independence. Using a literature-based conceptual model of social frailty, this manuscript identifies potential opportunities to assess social frailty. Because there is clear overlap between physical and social frailty, integrating a broader and socially-sensitive view of frailty into medical practice may be useful to identify factors that could impact frailty (both physical and social) and maybe amenable to interventions to improve patient outcomes.

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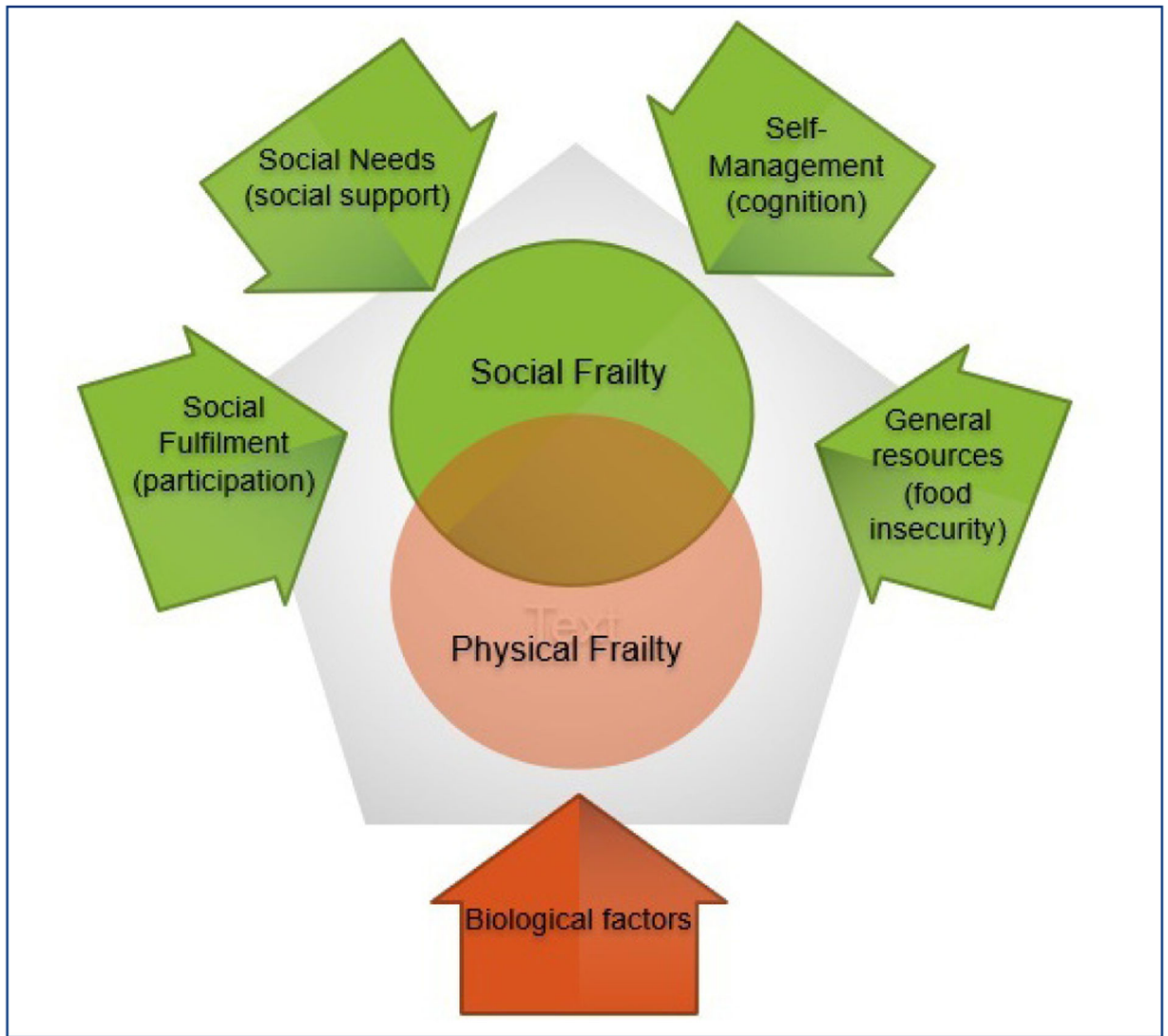
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**Figure 1.**  
Frailty and social frailty framework

**Table 1.**

The relationship between social frailty and physical frailty domains, along with clinical examples.

<b>Social Frailty Domains</b>	<b>Connection to Physical Frailty Domains</b>	<b>Clinical Example(s)</b>
Social Needs	Weakness/decreased grip strength	Lack of emotional and social support for daily activities
General Resources	Weight loss	Food insecurity results in food vs. housing decision, with housing taking precedence
Social Fulfillment	Exhaustion Slow gait speed	Depression leads to reduced social engagement and social participation
Self-management	Physical activities	Cognitive impairment results in reduced exercise and disease management leading to further sarcopenia

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**Table 2.**

Social frailty checklist

Domain	Element	Assessment	Clinical Assessment Timing
Social Needs	Social Supports	Perceived support when needed <sup>12</sup>	Demographic information
	Loneliness	UCLA loneliness <sup>13</sup>	Annual Wellness
General Resources	Food Security	Not able to afford the food in household in the last 12 months <sup>14</sup>	Annual Wellness
	Housing Security	Have any housing problems <sup>11</sup>	Annual Wellness
	Elder Abuse	Neglect, physical abuse, psychological abuse, financial abuse <sup>15</sup>	Annual Wellness
	Discrimination	Perceived Discrimination Scale <sup>16</sup>	Annual Wellness
Social Fulfillment	Leisure time activities	IADLs <sup>17</sup> Internet accessibility	Introduction to Medicare visit/Annual Wellness
	Mental Health	PHQ-9 <sup>18</sup>	Annual Wellness
Self-management	Cognitive Function	See AA Cog screening <sup>19</sup>	Annual Wellness
	Care Planning	Physical exercise and Physical Activity Scale for the Elderly (PASE) <sup>20</sup> Health care proxy; and instruction directives <sup>21</sup> (types of treatment do not want if facing a medical crisis)	Advance Care Planning