

Measuring frailty in adults in China



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The frailty index can be predictive of multiple adverse outcomes in older adults, including mortality, hospitalisation, falls, dementia, cardiovascular events, and fractures.^{1,2} Age-related health deficits might begin to accumulate in early adulthood, and the usefulness of the frailty index might not be confined to older adults.¹ However, whether the frailty index predicts poor health outcomes in adults younger than 50 years remains uncertain. Calibrating the frailty index to populations of younger adults is challenging given that the prevalence of frailty and adverse outcomes are generally low in these populations. Therefore, cohort studies with large populations and long-term follow-up are required. Using data from the China Kadoorie Biobank, Junning Fan and colleagues³ constructed a frailty index and assessed its predictive value for mortality in Chinese adults. The authors found that the frailty index was an independent predictor for all-cause mortality and cause-specific mortality from cancer, ischaemic heart disease, cerebrovascular disease, respiratory disease, infectious disease, and other causes of death. These findings suggest that the frailty index could be a surrogate measure of biological age and predict health and mortality risk. The results might help public health and primary care practices to identify frail individuals and develop proactive interventions. These findings are particularly important for China, which has a large and ageing population.

However, several aspects of the study deserve attention. First, although the frailty index was more strongly predictive of mortality in younger adults (<50 years) than in older adults (≥50 years), this finding does not mean that the frailty index is not predictive in older people.³ Importantly, the deficits related to cognition and functional ability, the essential elements for health assessments in older adults, were not included in the study. Second, for several diseases, such as chronic kidney disease or vertebral fracture, diagnosis was self-reported. Third, the frailty index constructed by Fan and colleagues³ had 28 items, whereas most studies incorporate more than 30 items into their frailty index.⁴ Finally, the primary endpoints in Fan and colleagues' study were all-cause mortality and cause-specific mortality from selected common diseases. Although some of the included diseases are major public health

concerns in both younger and older adult populations, other adverse outcomes, like functional disability, cognitive impairment, fracture, falls, hospitalisations, quality of life, loneliness, and nursing home admission, are also important in older populations and of concern for health-care cost and for public health and geriatrics.⁵

The frailty index covers comprehensive domains that can reflect impairments in muscle strength, mobility, cognition, vision, and functional ability, and people with frailty are characterised by reduced biological reserves and increased susceptibility to a broad range of internal and external stressors, physically, psychologically, and socially. Because frailty can be modifiable, identifying individuals with frailty has implications for public health and clinical practice, as recognised by WHO.⁶ However, translating the concept of frailty from research to public health and clinical practice has still a long way to go in China. First, the concept of frailty is not broadly acknowledged by health professionals. Second, the burden of frailty remains unclear, but evidence suggests that the burden varies with socioeconomic circumstance. Third, the ageing population generally have complex health problems and the manifestations of frailty can be heterogeneous within this population. Frail individuals are not necessarily recognised by their general practitioners, who tend to focus on specific medical diseases, and assessing frailty in a primary clinic or in the community could be seen as expensive and time consuming. Finally, care for individuals with frailty should be individualised, which could prove difficult when health-care resources are inadequate. All these issues challenge the social and health-care system in China.

Future research must evaluate the burden of frailty and develop accessible instruments, such as an electronic frailty index, to identify the frail population. More general practitioners must be trained to care for older people with frailty, and policy and strategy must be tailored towards frailty prevention in younger adults and slowing frailty progression in older adults to reduce the morbidity and public health consequences of frailty.

We declare no competing interests.

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- 1 Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. *Lancet* 2013; **381**: 752–62.
- 2 Rockwood K, Howlett SE. Age-related deficit accumulation and the diseases of ageing. *Mech Ageing Dev* 2019; **180**: 107–16.
- 3 Fan J, Yu C, Guo Y, et al. Frailty index and all-cause and cause-specific mortality in Chinese adults: a prospective cohort study. *Lancet Public Health* 2020; **5**: e650–60.
- 4 Mitnitski A, Rockwood K. Aging as a process of deficit accumulation: its utility and origin. *Interdiscip Top Gerontol* 2015; **40**: 85–98.
- 5 Hoogendijk EO, Afilalo J, Ensrud KE, Kowal P, Onder G, Fried LP. Frailty: implications for clinical practice and public health. *Lancet* 2019; **394**: 1365–75.
- 6 WHO. Integrated care for older people. Guidelines on community-level interventions to manage declines in intrinsic capacity. 2017. www.who.int/ageing/health-systems/icope (accessed Nov 7, 2020).