

FRAILTY

INSIDE THIS ISSUE

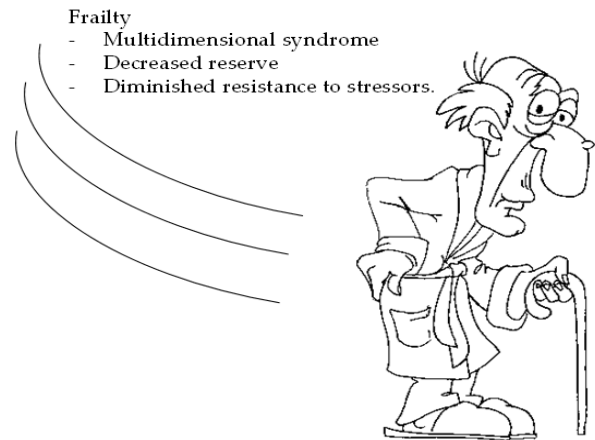
1. Introduction
2. What is frailty?
3. Measurement of frailty
4. Conclusion

Introduction

When we think of a frail person, what enters our imagination? For many people, it might be an emaciated elderly lady or gentlemen walking with a stick and when the wind blows, it feels as if they could be blown away anytime. This imagery brings forth several related concepts to the evolving definition of frailty. In this issue, the final in a series on *community health*, we discuss the emerging concepts of frailty.

What is frailty?

Frailty is a concept that has slowly begun to gain acceptance internationally. While there is broad agreement about the underlying conceptual framework of frailty, the elements constituting it is still an area of intense debate (1). There is general consensus that frailty is a multidimensional syndrome underpinned by decreased reserve and diminished resistance to stressors. While conceptually, frailty is related to concepts such as vulnerability, disability and comorbidities, these are not preconditions for frailty although they do coexist.



Measurement of frailty

Given the complexity and ambiguity in the precise constituents of frailty, different groups of clinicians and researchers have pioneered different instruments that measure components of frailty. These instruments illustrate the diversity and lack of consensus in the elements of frailty. We will summarise 2 of these instruments.

THE FRAILTY PHENOTYPE

The frailty phenotype (2) uses 5 criteria to define frailty: **weight loss**, **exhaustion**, **physical activity**, **walk time** and **grip strength**. A typical frail person would have unintentional weight loss and/or loss of muscle mass, weakness in grip strength, poor endurance, slow walking speed and decreased physical activity. Using these criteria, the researchers found that people who were identified as frail were at higher risk of adverse outcomes such as falls, hospitalisations, disability and death.

References

1. Rodriguez-Manas L, Feart C, Mann G, Vina J, Chatterji S, Chodzko-Zajko W, et al. Searching for an Operational Definition of Frailty: A Delphi Method Based Consensus Statement. The Frailty Operative Definition-Consensus Conference Project. *J Gerontol A Biol Sci Med Sci.* 2012 Apr 16;68(1):62-7.
2. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, et al. Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci.* 2001 Mar;56(3):M146-156.
3. Mitnitski AB, Graham JE, Mogilner AJ, Rockwood K. Frailty, fitness and late-life mortality in relation to chronological and biological age. *BMC Geriatric.* 2002 Feb 27;2(1):1.
4. Mitnitski AB, Mogilner AJ, Rockwood K. Accumulation of Deficits as a Proxy Measure of Aging. *Sci World J.* 2001;1:323-36.
5. Rockwood K, Song X, Mitnitski A. Changes in relative fitness and frailty across the adult lifespan: evidence from the Canadian National Population Health Survey. *CMAJ Can Med Assoc J.* 2011 May 17;183(8):E487-E494.

THE FRAILTY INDEX

The frailty index (3,4) takes on a different approach in measuring frailty. The frailty index builds on the concept of frailty as a state of decreased reserves and also acknowledges it as a multi-dimensional syndrome. Building on the assumption that the accumulation of health deficits is a representation of decreasing reserves, the researchers built an index that reflects the state of reserves of a person. Health deficits consist of a broad range of conditions such as impairments in activities of daily living to cognitive deficits. This state of reserve is then related to age to yield an age appropriate measure of the person's frailty level. The resulting frailty index is a strong indicator of proximity to death. The concept of the frailty index has been extended for use as a population wide measure in a Canadian population and the results of the validity of this measure has been encouraging (5).

Conclusion

Frailty is an evolving concept. While the conceptual framework of frailty has broad consensus, the individual constituents do not. This is evident in the diversity of measurements of frailty. Frailty is an interesting area and its developments have implications in how we conceptualise and treat the elderly in our population.

Author

Li Ruijie, MSc (Occupational Therapy) Senior Research Analyst

Ruijie worked as an occupational therapist prior to joining NHG as a research analyst. He has experience working in both the acute and community healthcare settings in Singapore. Ruijie obtained his Masters in Hong Kong and has since worked on numerous research projects aimed at documenting and improving healthcare related outcomes both in Hong Kong and locally. His research interests include assessing psychometric properties of instruments and using various quantitative and qualitative methods in analysis and interpretation of the data collected in studies.

