Ageing and frailty

Ben YF Fong *, MPH (Syd), FHKAM (Community Medicine)
Division of Science, Engineering and Health Studies, College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hong Kong

* Corresponding author: ben.fong@cpce-polyu.edu.hk

Hong Kong Med J 2022;28:344–6
https://doi.org/10.12809/hkmj215134

Ageing and healthcare services

The consequences of population ageing are major concerns for most governments, particularly in economically developed countries and regions. This has been exacerbated by the ongoing coronavirus disease 2019 (COVID-19) pandemic. In Hong Kong, government officials, professionals, academics, community leaders, parents, family members, carers, teachers and frontline workers have been facing unpredictable and changeable situations arising from measures introduced to limit the number of COVID-19 cases and associated deaths. There has also been excess mortality among the older population, mostly residents of elderly homes, during the fifth wave of the outbreak in early 2022.[1] In this issue of *Hong Kong Medical Journal*, Luk and Chan[2] highlight that the measures intended to protect the elderly population may have had the unintended adverse effect of worsening frailty and sarcopenia. Policymakers and healthcare providers are often caught off guard no matter how much time, effort, and resources have been invested in planning and preparing for public health crises.

Ageing populations aggravate the demand on social and health services, and Hong Kong's population—with one of the world's longest life expectancies of 85.2 years—is no exception. Longevity naturally results in more age-related problems such as declining functional and intrinsic capacities, including frailty, that require care and attention by family members, carers, and healthcare providers.[3] The Hong Kong population aged ≥65 years is predicted to increase from 16% in 2017 to 34% in 2066.[4] Many older adults need regular and long-term care; most of them have at least one common chronic condition resulting from ageing. Older adults also consume 6 times more in-patient services than do younger patients, and this represents a continuing burden to the healthcare system, affecting its sustainability.[5,6] The traditional model of public financing and delivery of acute-centric hospital-oriented care leads to significant and negative effects on accessibility, equity, and sustainability. In contrast, primary care effectively and efficiently provides better and more appropriate care to the residents in the best interests of the community.[7]

Geriatric syndromes

Complex health states commonly called geriatric syndromes are unavoidable in ageing and caused by a number of potentially concurrent bodily conditions like frailty, urinary incontinence, recurrent falls, mental impairment and pressure ulcers. Frailty is an emerging global health burden coming from the ageing populations. It is a syndrome arising from continuing changes and decline across multiple physiological systems of the immune, musculoskeletal and endocrine systems, often considered as minor and associated with fatigue, decreased muscle strength, and increase in dependence, falls, hospitalisation, mortality, and vulnerability to stressors as well as health costs. The affected older adults look shrinking, feel weak and exhausted, move slowly, resulting in low level of activity, cognitive impairment, slow gait, and poor balance. Thus, frailty is an important predictor and health indicator for the older adults. The prevalence increases with age and is found to be lower in the rural ageing population. Risk factors include multi-morbidity, polypharmacy, female gender, low socio-economic status and educational background, poor diet, and physical inactivity.[8,9] About 10% of older adults are affected by frailty but they may maintain almost full daily life capacity. However, there is potential of severe long-term effects on the wellbeing of individuals.[10] The affected older adults are less ready or able to recover from illnesses or injuries. This can have an obvious impact on the quality of daily living and life expectancy.[11]

Frailty and sarcopenia

As noted by Luk and Chan,[2] frailty and sarcopenia are closely related syndromes in geriatrics. Ageing entails the catabolism of muscles resulting in sarcopenia and frailty, and these often overlap in clinical presentation. The loss of muscle mass and function in sarcopenia is usually related to ageing but can also be induced by starvation, malnutrition, or inactivity. In contrast, frailty is age-related multi-system impairment and loss of weight and energy, but is not limited specifically to the muscles. Gait speed and hand grip strength are employed as diagnostic measures for both frailty and sarcopenia. Treatments for both of these two conditions also

overlap, including adequate protein and vitamin D supplementation, plus resistance exercise programmes, which may not be feasible for the old and frail.[12,13]

Detection and management of frailty

Lifestyle risk factors are potentially modifiable by specific interventions and preventive actions. The concept of frailty is increasingly being discussed in public health, and primary, acute and specialist care.[9] However, frailty may be missed or ignored as a process of normal ageing.[14] It is thus imperative to identify frailty routinely, as part of the comprehensive geriatric assessments in older adults, using validated simple-to-use screening tools.

In this issue of *Hong Kong Medical Journal*, Umehara et al[15] developed prediction models for the prognosis of pre-frailty and frailty in older patients with heart failure, and evaluated their accuracy. They found that the patient's condition at admission was predictive of pre-frailty and frailty, and that cardiac rehabilitation may help to improve frailty after cardiac intervention. These findings are consistent with a recent review by Ijaz et al,[16] who found that tailored cardiac rehabilitation in patients with cardiac failure was associated with positive results on frailty. Those authors therefore proposed that active screening should be incorporated into a patient-centred model of cardiovascular practice in order to identify frail older adults who would benefit from frailty intervention, particularly after cardiovascular interventions.[16] Such practices should be adopted in Hong Kong where cardiovascular diseases are prevalent and detection of early or pre-frailty will be beneficial to the older adults at higher risk.

Management of co-morbid conditions is essential when caring for frailty. Walking and simple body movements are considered useful in improving strength, thereby alleviating weakness, even for the very old.[17] The author started learning sitting tai chi a year before and had found it very effective for relaxation, co-ordination and positive feeling. Treatment plans must be individualised to address the age, goals of care and expectations of the patient and their family. When indicated, palliative care and symptom control can be considered for frailer older people.[14]

Ageing with frailty and dignity

Frailty is drawing more attention worldwide because of the increasing ageing populations. It is being better defined through consensus conferences, and research in ageing and the associated intrinsic capacity. Frailty is considered as partly preventable and thus early detection with screening tools is a critical step in routine geriatric assessment. Targeted interventions and management plans can then be initiated to allow the older adults to live a quality life with dignity, as part of the holistic and humanistic approaches in elderly care and services.[18,19]

Author contributions

The author contributed to the concept or design, drafting of the manuscript, and critical revision for important intellectual content. The author had full access to the data, contributed to the study, approved the final version for publication, and takes responsibility for its accuracy and integrity.

Conflicts of interest

The author has disclosed no conflicts of interest.

References

1. Cheung PH, Chan CP, Jin DY. Lessons learned from the fifth wave of COVID-19 in Hong Kong in early 2022. Emerg Microbes Infect 2022;11:1072-8.
2. Luk JK, Chan DK. Frailty and sarcopenia—from theory to practice. Hong Kong Med J 2022;28:392-5.
3. Yu R, Leung J, Lum CM, et al. A comparison of health expectancies over 10 years: implications for elderly service needs in Hong Kong. Int J Public Health 2019;64:731-42.
4. Census and Statistics Department, Hong Kong SAR Government. Hong Kong Population Projections 2017-2066. Available from: https://www.statistics.gov.hk/pub/B1120015072017XXXXB0100.pdf. Accessed 20 Aug 2022.
5. Elderly Commission, Hong Kong SAR Government. Report on healthy ageing executive summary. Available from: https://www.elderlycommission.gov.hk/en/library/Ex-sum.htm#2. Accessed 20 Aug 2022.
6. Kwok CL, Lee CK, Lo WT, Yip PS. The contribution of ageing to hospitalisation days in Hong Kong: a decomposition analysis. Int J Health Policy Manag 2017;6:155-64.
7. Ng TK, Fong BY, Kwong CK. Transition of hospital acute-centric to long term care in an ageing population in Hong Kong—is it an issue of service gap? Asia Pac J Health Manag 2019;14:11-5.
8. Woo J, Zheng Z, Leung J, Chan P. Prevalence of frailty and contributory factors in three Chinese populations with different socioeconomic and healthcare characteristics. BMC Geriatr 2015;15:163.
9. 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.
10. Age UK. Understanding frailty. Available from: https://www.ageuk.org.uk/our-impact/policy-research/frailty-in-older-people/understanding-frailty/. Accessed 20 Aug 2022.
11. Royal College of Nursing. Frailty in older people. Available from: https://www.rcn.org.uk/clinical-topics/Older-people/Frailty. Accessed 20 Aug 2022.
12. Dodds R, Sayer AA. Sarcopenia and frailty: new challenges for clinical practice. Clin Med (Lond) 2016;16:455-8.
13. Cederholm T. Overlaps between frailty and sarcopenia definitions. Nestle Nutr Inst Workshop Ser 2015;83:65-9.
14. Allison R 2nd, Assadzandi S, Adelman M. Frailty: evaluation and management. Am Fam Physician 2021;103:219-26.
15. Umehara T, Katayama N, Kaneguchi A, Iwamoto Y, Tsunematsu M, Kakehashi M. Models to predict prognosis in older patients with heart failure complicated by pre-

frailty and frailty: a pilot prospective cohort study. Hong Kong Med J 2022;28:356-66.
16. Ijaz N, Buta B, Xue Q, et al. Interventions for frailty among older adults with cardiovascular disease: JACC state-of-the-art review. J Am Coll Cardiol 2022;79:482-503.
17. Johns Hopkins Medicine. Stay strong: four ways to beat the frailty risk. Available from: https://www.hopkinsmedicine.org/health/wellness-and-prevention/stay-strong-four-ways-to-beat-the-frailty-risk. Accessed 20 Aug 2022.
18. Kwak D, Thompson LV. Frailty: past, present, and future? Sports Med Health Sci 2021;3:1-10.
19. Law VT, Fong BY, editors. Ageing with Dignity in Hong Kong and Asia: Holistic and Humanistic Care. Singapore: Springer; 2022.