INTRODUCTION

Frailty is the essence of geriatric medicine that expresses needs in a concise, quantifiable, and measurable way that can be understood by clinicians, health managers, and policy-makers. It has an underlying pathophysiology representing multisystem dysregulation and homeostatic failure. Although there is no consensus regarding a single instrument of assessment, there is universal agreement regarding its importance, judging by the increasing volume of research that has been published in the past 20 years, initially in the field of geriatrics and gerontology, and more recently in other clinical specialties. Whatever assessment tool is used, there is general agreement that it is a prevalent condition with increasing age, affecting approximately 20% of those aged 85 years and over. With population aging worldwide, the frailty phenotype is increasingly relevant to the health and social care of older people. Frailty may also be assessed using the multiple-deficit approach promoted by Rockwood and operationalized in the hospital setting as the electronic Frailty Index. It has also been used as a public health indicator and in examination of social determinants of frailty. These two concepts are not necessarily the same, since the Fried frailty phenotype describes a physiological state that occurs before the onset of disability, while the deficit accumulation model includes diseases and disability. As for diseases, prevention, screening, diagnosis, prognosis, and treatment may be applied to this entity. It may: be used as a predictor of service utilization that would inform service provision needs; be used as a public health indicator of aging well for projection of health and social care resource allocation; and represent an important entity to inform social and health policies, including health promotion.
Frailty research has also developed as for other chronic diseases in attempts to characterize the condition by studying underlying genomic, proteomic, and metabolomic factors (“frailomics”), as well as how the social and physical environment, such as urban design, may contribute to frailty. As for other diseases, there are strong socioeconomic determinants and there is a close association with psychological well-being indicators.

Frailty assessments have been adopted by various medical as well as surgical specialties as part of prognosis in influencing choice of therapy, although assessment tools are even more heterogeneous than those in the gerontological fields.

The importance of geriatric syndromes in addition to non-communicable diseases in public health necessitates a comprehensive response in aging populations to achieve healthy aging with an emphasis on function. This perspective is promoted in the World Health Organization’s life course approach on healthy aging, which calls for measures at every life stage to maximize or preserve function at later ages. Integral to achieving this goal is the provision of the Integrated Care for Older People (ICOPE) primary care model, which may be applied to middle- and low-income countries in addition to high-income countries. The ICOPE document calls for a step-care approach in screening for sensory impairment, undernutrition, mobility disability, cognition, and psychological states. Tools for measurements in these domains are being developed and field-tested in some middle- and low-income countries. The term intrinsic capacity has been coined as a descriptor of an individual’s capacity in these domains that may be applicable throughout the life course.

Frailty may be regarded as the opposite of intrinsic capacity when applied to the phase of the declining trajectory of aging, before the onset of disability.

2 | RELATIONSHIP BETWEEN FRAILTY, DISABILITY, SUCCESSFUL AGING, INTRINSIC CAPACITY, AND RESILIENCE

Historically, the field of aging has been dichotomized into medical (or health) and social perspectives, and it is only in recent years that there have been calls for a need to integrate these disciplines in order for a person-centered approach to be adopted in both research and service provision. Thus, inevitably there are overlaps in concepts represented by frailty, successful aging, intrinsic capacity, and resilience, with successful aging and resilience developing from the social science field, and frailty and intrinsic capacity developing from the health science field. Aging from a person-centered perspective necessitates a consideration of how these concepts are related. In recent years, various studies have examined the concept of successful aging and what it means to older people; its definition has changed from an absence of disease towards that emphasizing function. The indicators of function, and therefore successful aging, are similar to those used in frailty research, hence successful aging and frailty may be considered opposite sides of the same coin. Intrinsic capacity is a descriptor that may be used throughout the life course, but when applied to the pre-disability phase of declining age trajectory, may be regarded as the same as frailty. The World Health Organization has proposed indicators of intrinsic capacity under five domains, some of which overlap with some frailty indicators, such as walking speed. Resilience may be regarded as made of up a personal characteristic (which may be biological or psychological) acting in concert with environmental factors (physical or social) that enables a person to overcome an adverse event.

These different terms may be used in different settings. Frailty and sarcopenia (which may be considered physical frailty) would be more useful in clinical management in hospitals and residential care homes, as well as in community models of care. Intrinsic capacity could be used for development of health-promotion policies and service models across the life course: mainly primary care with low resource needs, using step-care approaches rather than professionals at the initial steps. Resilience could be considered an overarching holistic concept covering physical, psychological, and environmental domains, which is still in the research arena, but addresses the concern with the negative image of aging and stigmatization.

3 | A MORE POSITIVE PARADIGM FOR AGING POPULATIONS

The above discussion provides a more positive paradigm for aging populations to show individuals as well as policy-makers how healthy aging may be achieved, and that this demographic change is not inevitably accompanied by dependency and increasing need for institutional care. The emphasis should be on primary care, being central to the prevention of increasing burden of geriatric syndromes, and hence increasing health and social service resources. A descriptor of aging that is not considered stigmatizing may stimulate changes towards more age-friendly physical and social environments. It may also be used to address various inequalities to be tackled as part of the United Nations Sustainable Development Goals. Geriatricians have a key input to all these initiatives as they function outside of the hospital paradigm.

4 | HONG KONG CASE STUDIES

Hong Kong currently has the longest life expectancy at birth for men and women in the world. It has well-established health and social services under separate administrations. Primary care is largely provided by the private sector. Health and social policies are still targeted towards prevention and treatment of chronic diseases in hospital settings, a model that is not sustainable. A recent review of elderly services concluded that the way forward is to develop community care with medico-social integration, with the setting up of community health centers using a nurse-led approach.

The Hong Kong Jockey Club Charities Trust, a major philanthropic organization with a major theme in supporting projects relating to the older population, is supporting two initiatives that explore...
newer models of service delivery, emphasizing empowerment, self-management, behavior change, and use of technology.

4.1 | Tai Po Cadenza Hub

The Tai Po Cadenza Hub was first developed as an experimental model of community care to respond to the multiple needs of older adults, covering functional, psychological, and social care needs in addition to existing models of care for individual diseases. It represents a medico-social model to support frail older people with multimorbidity to remain in the community using a case management approach, covering health promotion for healthy aging, maintenance of health and function, as well as day care service. A frailty-prevention program targeting physical and cognitive frailty has been provided in recent years, and has proved very popular, with long waiting lists. Key features include a 12-week program in groups according to frailty levels that emphasizes strength, fitness, and balance training, as well as cognitive training activities (either computer games or board games) in an enjoyable social atmosphere. Objective improvements in physical and cognitive function measures have been documented, while many users have responded that they feel better and are motivated to continue the program on an ongoing basis. This shows that behavior change has occurred. Continuing development of the Hub includes the possibility of placing this model as the first step of a step-care nurse-led medico-social integrated community model for older people’s primary care. This is currently being trialed over many community centers in Hong Kong as the E Health Project.

4.2 | E Health Project

The E Health Project uses technology to capture the unmet needs of 10 000 older people, half of whom also have blood pressure captured twice weekly and relayed to a central server for further action. Older people are based in 80 centers covering all 18 districts of Hong Kong. Advice is provided by telephone following abnormal readings in real time and response to unmet needs are then provided by telephone and also by project staff. The response is guided by an algorithm, so there is huge potential for this process to be automated after detailed evaluation. The categories of unmet needs are similar to those described in the ICOPE program, covering sensory impairments, chewing difficulties, frailty, sarcopenia, memory problems, difficulties with basic and instrumental activities of daily living (IADL), incontinence, polypharmacy, psychological well-being, and financial problems. Substantial unmet needs have been documented so far in many areas: subjective memory impairment (74%), pre-frail and frail conditions (63%), chewing difficulties (38%), incontinence 33%, IADL problems, polypharmacy, low subjective well-being, and insufficient income (all between 20% and 22%), sarcopenia (13%), and poor self-rated health (12%). A detailed description of this initiative is provided elsewhere. A detailed description of this initiative is provided elsewhere. Evaluation after 1 year showed that those who were frail had increased use of health services. For those who had blood pressure measured, there was an overall mean reduction of 5.1 mm Hg in systolic blood pressure and 2 mm Hg in diastolic blood pressure. Overall there was a 50% improvement in subjective well-being, with district variation, so that districts with older people with lower disposable income and education level improved the most after 1 year of the program. Greater variation in repeated blood pressure measurement values was associated with frailty and increased use of hospital services.

5 | CONCLUSION

It can be seen that by adopting a life course approach emphasizing healthy aging as a goal, a more positive paradigm may be developed that should guide health and social care policies in response to population aging, using the concept of frailty as a cornerstone of health and social care systems. Community primary care for older people targeting prevention of functional decline and preservation of function, in addition to the usual chronic disease-management approach, can be developed that incorporates empowerment, self-management, and step-care models aided by use of technology. Such an approach may reduce the magnitude of the downstream service requirements for an increasingly growing population with dependency.

CONFLICT OF INTEREST

The author declares that she has no competing interests.

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