賽馬會齡活城市
Jockey Club Age-friendly City

AgeWatch Index for Hong Kong

Topical Report on Health Status

香港中文大學
The Chinese University of Hong Kong

香港中文大學
賽馬會老年學研究所
CUHK Jockey Club Institute of Ageing

Initiated and funded by
香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust
同心同步同進 RIDING HIGH TOGETHER

AgeWatch Index for Hong Kong: Topical Report on Health Status

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ISBN: 978-988-13333-4-6

Published in 2018

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In support of the Chinese University of Hong Kong's (CUHK) aspiration to overcome the challenges brought to Hong Kong's society by the ageing of its population, CUHK has established The CUHK Jockey Club Institute of Ageing in 2014 with the generous support of The Hong Kong Jockey Club Charities Trust.

Since its establishment, the Institute has embarked on collaborative research projects in gerontechnology, healthy ageing and community intervention programmes for health promotion and prevention of frailty. Efforts to promote messages about ageing have been made through a dedicated series of TV programmes; announcing the results of the first multi-dimensional AgeWatch Index of Hong Kong; and launching the "Jockey Club Age-Friendly City Project" led by The Hong Kong Jockey Club Charities Trust.

Building on the University's long-standing effort in research into ageing and cooperating with charitable organizations, the Institute will continue to build its capacity and serve as a platform for ageing-related research, training and community outreach programmes.

Vision
To make Hong Kong one of the most age-friendly cities in the world.

Mission
To bring together the research personnel and work on ageing across disciplines to promote and implement holistic strategies for active ageing through research, policy advice, community outreach and knowledge transfer.

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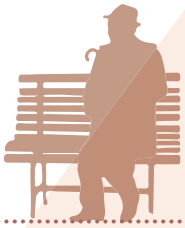

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Preface – The Hong Kong Jockey Club

Building Hong Kong into an age-friendly city requires the concerted efforts of many different stakeholders in the community. With the aim of promoting an age-friendly culture in Hong Kong, The Hong Kong Jockey Club Charities Trust is partnering four gerontology research institutes of local universities to implement the Jockey Club Age-friendly City Project. As one of the project's core components, an AgeWatch Index for Hong Kong has been compiled annually since 2014 to assess the social and economic well-being of older people in comparison with other countries or regions across the globe, and to provide a basis for project planning. A series of topical reports featuring the four domains of the AgeWatch Index, namely income security, health status, capability, and enabling environment, are being published periodically.

Following the first topical report on "enabling environment", this latest report on "health status" examines the concept of healthy ageing, with particular emphasis on the physical well-being and mental health of older people in Hong Kong. The report also covers elderly policy initiatives in Hong Kong and discusses the way forward to make it a more age-friendly city for healthy and active ageing. We believe that by helping older people maintain their functional ability and guiding them to lead a healthy lifestyle, active and positive ageing can successfully be promoted in the community.

On behalf of the Trust, I would like to express my heartfelt gratitude to the CUHK Jockey Club Institute of Ageing for compiling the Index and publishing this series of topical reports. These publications can enable the public to better understand the concept of an age-friendly city and provide a basis for the different stakeholders to engage in further discussions and collaboration on enhancing the city's age-friendliness.

Mr. Leong Cheung
Executive Director, Charities and Community
The Hong Kong Jockey Club

Preface – CUHK Jockey Club Institute of Ageing

Health is the most important asset in our lives. With sustained economic development and environmental and healthcare improvements, older adults living in Hong Kong and around the world are enjoying a longer life expectancy. Although an increase in life expectancy is often assumed to be accompanied by good health, there is a lack of evidence suggesting that our older adults are healthier than their counterparts in the past. Chronic diseases, hypertension, diabetes, and chronic obstructive pulmonary disease, to name a few, increase in prevalence with age. More importantly, many older adults live with geriatric syndromes, which are a range of clinical conditions that do not fit into well-defined disease categories. Examples include frailty, sarcopenia, cognitive impairment, and urinary incontinence. These syndromes, however, are seldom recognized and managed in our society and current health care system. Moreover, there is recent evidence in Hong Kong that increasing life expectancy may be accompanied by increasing trends of functional dependency and frailty.

In view of the rapid increase in the ageing population, healthy ageing is an increasingly important goal all over the world. According to the World Report on Ageing and Health 2015, healthy ageing takes on a life-course and functional perspective. It refers to a process of developing and maintaining the functional ability that enables well-being in older age. The concept highlights that functional decline and frailty is not an inevitable consequence of ageing. Early prevention and intervention integrating the healthcare and community sectors can help maintain intrinsic capacity among our older adults.

To promote healthy ageing in an urban society like Hong Kong, the World Health Organization is promoting the concept of the age-friendly city, which is an inclusive and accessible community environment that optimizes opportunities for health, participation and security for older adults, in order that quality of life and dignity are ensured as they age. Supported by the Hong Kong Jockey Club Charities Trust, our Institute has joined three other ageing institutes in Hong Kong to implement an age-friendly city project, combining academic research with district programmes to enhance the age-friendliness of every district in Hong Kong. Our ultimate goal is to help older adults age healthily and actively.

Prof. Jean Woo, MD, FRCP, FRACP
Director, CUHK Jockey Club Institute of Ageing
The Chinese University of Hong Kong

Executive summary

This is the second report of the topical report series of the Global AgeWatch Index for Hong Kong. Each report in this series investigates significant worldwide trends and initiatives in one domains in the Global AgeWactch Index (i.e. income security, health status, capability and enabling environment), in the particular local context of Hong Kong. This series provides a broader context of the four domains to the annual Report of AgeWatch Index for Hong Kong.

This report provides a detailed discussion of the domain of health status in Hong Kong. It discusses the physical and mental health of older adults in Hong Kong and illustrates the concept of healthy ageing. It also presents examples of health policy initiatives in Hong Kong. The report aims to increase readers' awareness of building up a healthy city.

行政摘要

本報告為「香港長者生活關注指數」專題報告系列的第二本報告。每本專題報告以香港為例，探討有關「全球長者生活關注指數」四個領域（收入保障、健康狀況、能力和有利環境）之一中重要的國際趨勢及行動。此系列增補「香港長者生活關注指數報告」，有幫讀者了解香港長者不同領域上的福祉。

本報告詳盡講述香港在「健康狀況」領域上的表現，討論香港老年人的身心健康議題，闡述了健康老齡化的概念，並列舉在香港實施的健康政策。本報告旨在提高大眾對建立對健康老齡化的關注。

Chapter 1

Ageing and Healthy Ageing

1.1 Ageing population

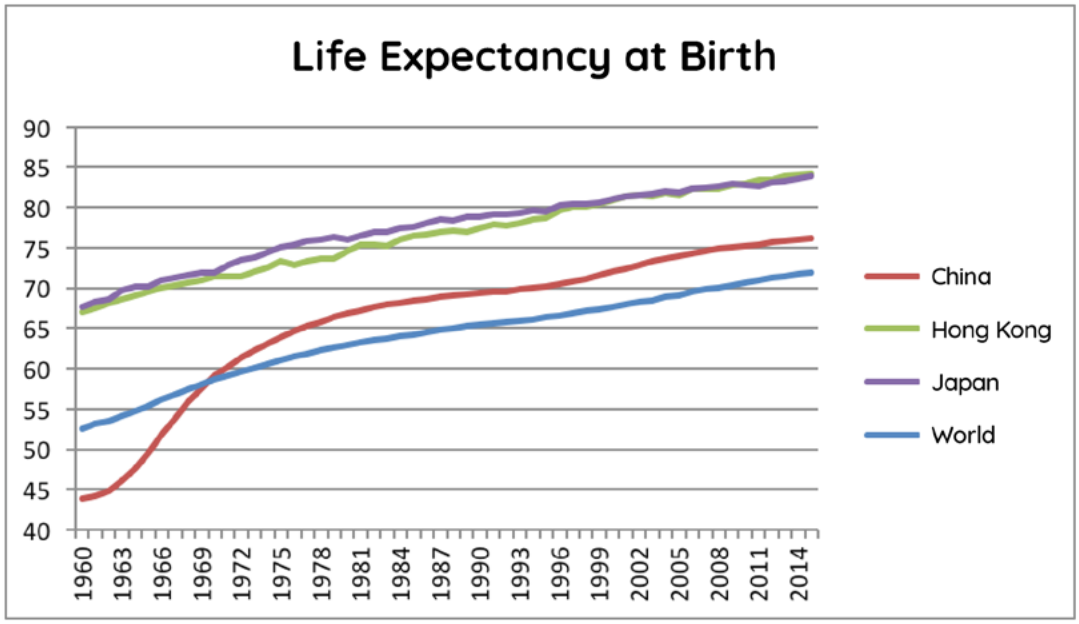
The population is ageing in nearly every developed and developing country around the world. Population ageing is becoming one of the most significant social transformations of the 21st century, with implications for nearly all sectors of society. While our older adults enjoy a longer life expectancy, physical and mental health problems remain unaddressed and are often increasing.

1.1.1 Life expectancy in Hong Kong

With sustained economic development and improvements in education, lifestyle, nutrition, sanitation, and healthcare, the world has experienced a significant decline in mortality (McMichael, McKee, Shkolnikov, & Valkonen, 2004; Moser, Shkolnikov, & Leon, 2005). At the same time, the total fertility rate has also been dropping over recent decades (WHO, 2012). As a result, the size of the ageing population and life expectancy worldwide are increasing rapidly.

Compared with the rest of the world, the population of Hong Kong is experiencing a more rapid ageing process. In the past 30 years, the mortality and fertility rates of the Hong Kong population have nearly halved (Census and Statistics Department, 2016). According to the data available from the World Bank, in 2015 the average life expectancy at birth and age 60 of the Hong Kong population were 84.3 and 26.5 years respectively (The World Bank, 2015), thus ranking among the best among the world (see Figure 1.1). It is estimated that one-third of the Hong Kong population will be aged 65 or above in 2064 (Census and Statistics Department, 2015b).

Figure 1.1 Life expectancy at birth



Source: The World Bank (2015)

1.1.2 Morbidity

Maintaining good health in Hong Kong older adults is of the utmost importance in enhancing their quality of life and well-being. Although an increase in life expectancy is often assumed to be accompanied by an extended period of good health, there is a lack of current evidence suggesting that older adults are healthier than their counterparts in the past. While there is a decline in the prevalence of severe disability (e.g. Chatterji et al., 2015), there is no clear decline in the prevalence of less severe disability and chronic diseases. Furthermore, there is a paucity of data with respect to frailty, a condition related to many adverse health outcomes such as disability, falls, hospitalization and mortality (Rockwood et al., 1999; Speechley & Tinetti, 1991). The term frailty refers to the progressive age-associated decline in physiological reserves or loss of homeostasis as a result of the reduced capacity of physiological systems to respond to, and their increased vulnerability to, stressors (Fried et al, 2001). Moving away from disease-based approaches towards an integrative, health-based approach, the concept of frailty offers a new understanding of health problems in old age. There seems to be an increasing trend of frailty among successive cohorts, leading to an increased dependence on care and subsequent use of health and social care resources (Yu et al., 2017; Zeng, Feng, Hesketh, Christensen, & Vaupel, 2017). The latest conceptualization of frailty extends beyond the physical domain to include cognitive, social and psychological components, which matches well with the World Health Organization's (WHO) discussion of health including physical, social and psychological well-being. Until now, current evidence might suggest that older people are having a longer life, but not necessarily a healthier one. This hints that an increase in life expectancy may be partly due toan end of life stage prolonged by medical treatments, but is not necessarily accompanied by an improvement in the quality of public health services. Moving away from disease-based approaches towards an integrative, health-based approach, the concept of frailty offers a new understanding of health problems in old age.

1.1.3 Insights from the AgeWatch Index for Hong Kong 2015: health status domain

Due to differences in environmental and personal factors, geographical variation in the health status of older adults is to be expected. An international comparison of the health status of older adults would aid the understanding of these health disparities, and provide insights into promoting healthy ageing in individual countries and territories. The Global AgeWatch Index, a multidimensional index to assess the well-being of older adults in more than 90 countries, is a good tool serving this purpose.

The domain of health status, measured with life-expectancy at 60, healthy life expectancy at 60, and relative psychological well-being, offers an overview of the health status of older adults in different countries and territories. The CUHK Jockey Club Institute of Ageing, with funding support from the Hong Kong Jockey Club Charities Trust, has compiled the AgeWatch Index for Hong Kong 2015 to rank Hong Kong into the Global AgeWatch Index 2015.

It is found that Hong Kong ranked 19th overall, and 10th out of 97 countries or territories in the domain of health status (see Table 1.1). Specifically, Hong Kong ranked top in life expectancy at 60, 3rd in healthy life expectancy at 60, but 79th in relative psychological well-being. These findings revealed that the physical health, at least in terms of life expectancy, is quite well catered for in Hong Kong older adults, but that their psychological well-being deserves more attention.

Table 1.1 Rankings of Hong Kong in Global AgeWatch Index 2015

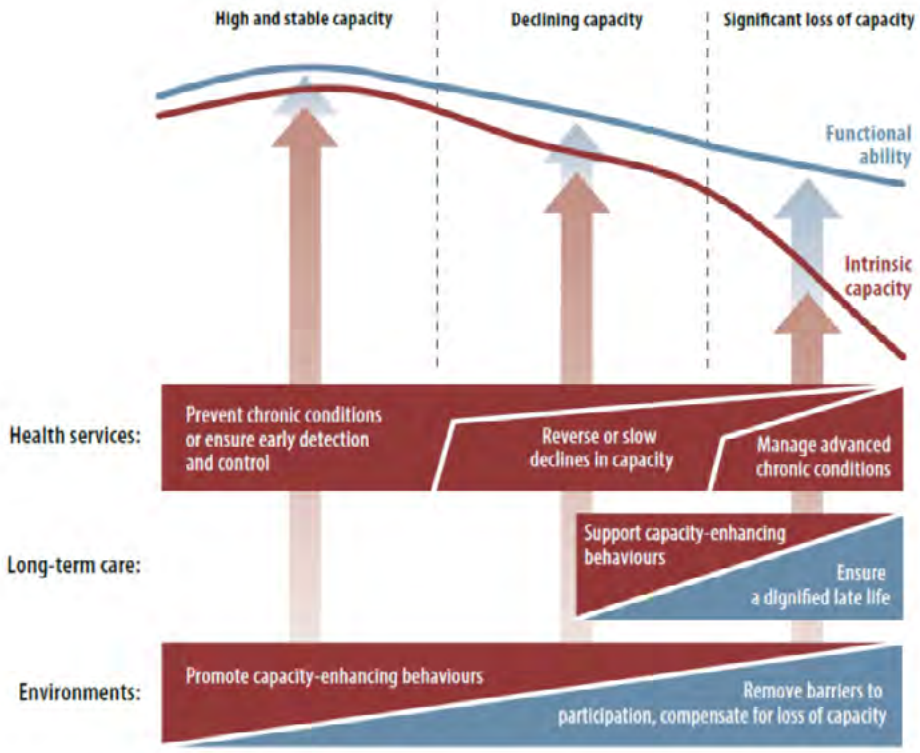
Country/ territory	Overall	Domain: Health status	Life expectancy at 60	Healthy life expectancy at 60	Relative psychological well-being
Hong Kong	19	10	1	3	79
Japan	8	1	2	1	68
USA	9	26	29	23	21
UK	10	28	13	20	71
Australia	17	5	3	6	38
Switzerland	1	2	3	2	30
Norway	2	17	13	28	13
Germany	4	12	13	19	4

Source: CUHK Jockey Club Institute of Ageing (2017)

1.2 Healthy ageing : a public health framework

Achieving healthy ageing is a common goal for older people all over the world. Under the public health framework proposed by The WHO in the World Report on Ageing and Health (2015), healthy ageing takes on a life-course and functional perspective, highlighting the dynamics between age-associated physiological and psychosocial changes to determine an older person's intrinsic capacity. While cross-sectional data show a gradual decline in intrinsic capacity with increasing age, the environments older people interact with are also essential factors in determining what they can actually do. The functional ability of older people is a function of the interaction between their intrinsic capacity and their environment.. Healthy ageing does not refer to a disease-free state only, but "the process of developing and maintaining the functional ability that enables well-being in older age" (WHO, 2015c, p. 13; see Figure 1.2). It reflects the ongoing interplay between individuals and their surrounding environment. These interactions results in distinct trajectories of both intrinsic capacity and functional ability, in which an optimal trajectory enables older people to live a long and healthy life in a supportive environment. Along these trajectories, the emergence of geriatric syndromes, in particular frailty, signals a decline in functional ability. Yet, frailty is not an inevitable consequence of ageing: integrated health and social service interventions for frail older people have positive effects on their health and quality of life (Woo, 2017). Therefore, frailty management may change the trajectories of both intrinsic capacity and functional ability to achieve healthy ageing.

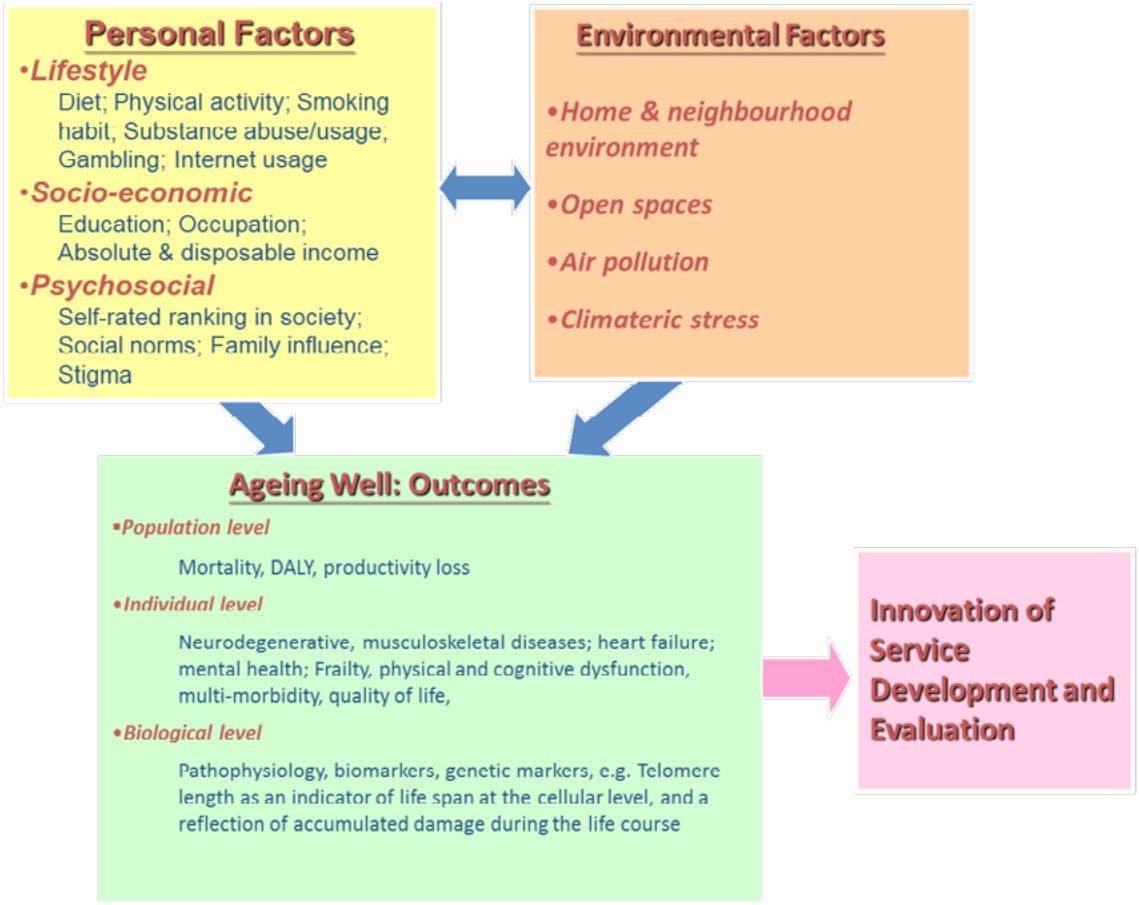
Figure 1.2 The public-health framework for Healthy Ageing: Opportunities for public-health action across the life course



Source: WHO (2015)

To achieve healthy ageing through maximizing functional ability, WHO (2015) highlighted the importance of considering options to reinforce resilience and psychosocial growth, besides mitigating the losses associated with ageing. Four priority areas for action to achieve healthy ageing for older adults are identified, including aligning the health system to the needs of older populations, developing systems to provide long-term care, ensuring all people grow old in an age-friendly environment, and improving measurement, monitoring and understanding of healthy ageing. In tandem with the development of the Global Strategy and Action Plan on Healthy Ageing undertaken by the WHO Member states, initiatives and policies to promote healthy ageing are being considered or implemented. In addition, the impact of national or territory-wide policy on healthy ageing, personal characteristics such as lifestyle, socioeconomic status and psychosocial factors should not be ignoredl (see Figure 1.3).

Figure 1.3 Impacts of personal and environmental factors on ageing well



Source: Woo (2017)

Achieving healthy ageing and maintaining good health in older adults is an important goal in ageing Hong Kong. This topical report, supplementing the annual "Report on AgeWatch Index for Hong Kong", aims to discuss the health status of older adults in Hong Kong and provide insights into promoting healthy ageing in Hong Kong.

Chapter 2

Physical Health of Older Adults in Hong Kong

Maintaining good physical health is important to the well-being of older adults. Under the WHO healthy ageing framework, having good physical health corresponds to optimal intrinsic capacity and functional capacity (WHO, 2002a). While some physical conditions are linked with the ageing process, noncommunicable diseases (NCDs) and geriatric syndromes can be managed by living a healthy lifestyle and supportive environment. A holistic review of physical health in old age helps better understand the healthy ageing process.

2.1 NCDs and multimorbidity

Despite a longer healthy life expectancy and better prevention and control of infectious diseases, there has been an increasing trend in the prevalence of NCDs, such as cancers, cardiovascular diseases and diabetes (see Box 2.1). With a life-course approach, individuals are influenced by factors acting at all stages of the lifespan while the risk of developing NCDs accumulates with age (Kalache, Aboderin, & Hoskins, 2002). In Hong Kong, a strong expansion of chronic morbidity among the older adults with longer expectancy was found (Cheung & Yip, 2010). More importantly, multimorbidity, the co-occurrence of two or more chronic diseases within an individual, has become recognized as the most common chronic medical condition (Tinetti, Fried, & Boyd, 2012).

Box 2.1 Cancer, Cardiovascular disease and Diabetes

Cancer is a rapid creation of abnormal cells growing beyond their usual boundaries invading adjoining parts of the body, and spreading to other organs (WHO, 2017a). Ageing is a major factor for the development of various types of cancer, most likely due to risk accumulation combined with the tendency for cellular repair mechanisms to be less effective as a person grows older. According to the Hong Kong Cancer Registry, the mortality and incidence rate increase by between three and five times from the age group 45 – 64 to the group aged above 65 (Hong Kong Cancer Registry, 2017).

Cardiovascular diseases are a group of disorders of the heart and blood vessels, including coronary heart disease, cerebrovascular disease and strokes (WHO, 2017b). They are usually acute events and are mainly caused by a blood clot blocking blood from flowing to the heart or brain (American Heart Assoication, 2017). Among the Hong Kong population, the number of deaths due to cerebrovascular diseases and coronary heart diseases increases markedly after age 70 (Department of Health, 2015).

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces (WHO, 2017c). One is more likely to develop Type 2 diabetes after age 45. In Hong Kong, the number of deaths due to diabetes mellitus also increases with age. Almost half of all deaths attributable to high blood glucose occur before the age of 70.

2.1.1 Multimorbidity and ageing

Ageing is the strongest risk factor for multimorbidity because of its contribution to the chronic impairment of multiple organ systems (Fabbri et al., 2015). When a certain threshold is reached, these impairments become clinically manifested as multiple chronic diseases (Ferrucci & Studenski, 2012). The prevalence increases substantially with age. Using data collected through the Thematic Household Survey, a significant dose-response relationship of age with an increased number of chronic diseases was revealed (Chung et al., 2015). Table 2.1 summarizes the multimorbidity patterns in the Hong Kong general public by age group (Ching, 2014).

Table 2.1 Number of doctor-diagnosed chronic disease

Age group	None	One	Two or more
18-24	89.80%	8.40%	1.80%
25-34	87.30%	9.20%	3.50%
35-44	77.80%	16.80%	5.40%
45-54	66.30%	23.20%	10.50%
55-64	43.20%	30.80%	26.00%

2.1.2 Risk factors for multimorbidity

Apart from ageing, there are other sociodemographic factors associated with multimorbidity. A local cross-sectional study revealed that being female, having primary or lower education level, having a monthly household income less than HK$15,000, and unemployment or retirement were significant risk factors for multimorbidity, suggesting that those with lower socio-economic status might have less access to, and continuity of, care as compared with those of higher status but with less burden of multimorbidity (Chung et al., 2015). The inequalities in access to health services can increase severity and complications among the underprivileged (Nunes, Thumé, & Facchini, 2015). Box 2.2 further discusses lifestyle factors for multiple chronic conditions.

Box 2.2 Lifestyle risk factors among older adults

Apart from advanced age per se, unhealthy lifestyle patterns among older adults also contribute to the high prevalence of multimorbidity. Thousands of scientific studies have shown that physically inactive older adults have higher risks of heart disease, falls and injuries, obesity, high blood pressure, adult-onset diabetes, osteoporosis, stroke, depression, colon cancer and premature death. A local survey revealed that one-quarter of older adults aged 65 years old and above did not have a habit of doing exercise, and more than half did not have a sufficient physical activity level (Elderly Commission, 2001).

Another risk factor is malnutrition, resulting in loss of muscle strength, impaired immunity, poor functional ability and general weakness. Older adults are particularly vulnerable to malnutrition, attributable to eating-related problems, ranging from chewing problem to lack of dentures to swallowing difficulty with weakened muscles and reflexes. This may result in a relatively low fruit and vegetable consumption, particularly affecting older adults who tend to have constipation due to less active intestines.

The third lifestyle risk factor of multimorbidity is tobacco use. It is associated with lung cancer, chronic obstructive pulmonary diseases and coronary heart disease, stroke, peptic ulcer and other forms of cancer like oesophageal cancer and cancer of the larynx. According to the General Household Survey, the prevalence of daily smokers aged 60 and above is only 10%, but nearly half of ex-smokers were aged 60 and over (Census and Statistics Department, 2015c). International studies have shown that quitting smoking brings about health benefits even among the very old. It is therefore important that messages about the health risks of smoking are reinforced not only among the young but also to the older adults.

2.1.3 Impacts of multimorbidity

Individuals with multimorbidity have poorer health outcomes. Much evidence has shown that multimorbidity predicts mortality, with life expectancy substantially declining as the number of chronic conditions in individuals increases to three or more diseases (DuGoff, Canudas-Romo, Buttorff, Leff, & Anderson, 2014; Menotti et al., 2001). For subjective health, moderate or poor self-rated health was found to increase with the number of chronic conditions (Mavaddat, Valderas, van der Linde, Khaw, & Kinmonth, 2014), predicting a decline in mortality and functional ability (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Idler & Kasl, 1995). For wellbeing, an inverse relationship, of increasing multimorbidity with health-related quality of life and psychological distress is well-documented in the literature (Chen, Baumgardner, & Rice, 2011; Chung et al., 2015; Wikman, Wardle, & Steptoe, 2011).

Besides, individuals with multimorbidity are more likely to be functionally impaired or disabled, with an increasing risk of immobility and functional dependency as the number of chronic diseases increases. A study reports that even one newly diagnosed chronic condition is associated with nearly twice the likelihood of functional dependency onset during 12, 24, and 36 months of follow-up (Wolff, Boult, Boyd, & Anderson, 2005). Comorbidity including stroke, dementia and musculoskeletal disorders are associated with disability and difficulty in coping with activities of daily living (ADL) among older adults (Cheung & Yip, 2010). The associations between multimorbidity and disability are stronger among the old-old than the young old (Jindai, Nielson, Vorderstrasse, & Quiñones, 2016). For example, stroke caused by uncontrolled high blood pressure or microvascular and macrovascular problems complicated by uncontrolled blood glucose levels are closely related to the amputation of limbs (Nunes et al., 2015). Another example, the comorbidity of dementia, a neurocognitive disorder, is discussed in details in Box 2.3.

Box 2.3 Dementia and Multimorbidity

Dementia is an example which embodies all the complex challenges of multimorbidity. In particular, patients with dementia present on average four additional chronic medical conditions, including the two most frequent ones: hypertension and diabetes (Banerjee, 2015). Second, dementia itself often may be considered an expression of multimorbidity (involving both vascular and degenerative components). In longitudinal studies, the presence of multimorbidity in patients with dementia has been associated with accelerated functional decline (Melis et al., 2013). Using data from a large sample of cognitively healthy, community-dwelling older adults enrolled in the Canadian Study of Health and Aging, Song and collaborators (Song, Mitnitski, & Rockwood, 2011) found that the age-associated decline in health status was significantly associated over 5-year and 10-year follow up with the incidence of Alzheimer dementia and dementia of all types, even after adjusting for chronological age and traditional risk factors such as stroke and diabetes (Fabbri et al., 2015).

2.1.4 Implications of multimorbidity

The complications and interactions of multiple chronic diseases can be the focus of interest because of their far-reaching effects on both health and health care services (Valderas, Starfield, Sibbald, Salisbury, & Roland, 2009). A reciprocal causality is speculated between more health service use and greater multimorbidity (Nunes et al., 2015). Therefore, health service utilization becomes a marker of multiple chronic problems, which can be an efficient way of quickly screening elderly people with multimorbidity during assessments by healthcare professionals (Nunes et al., 2015). With more and longer period of hospitalization, patients affected by multiple chronic diseases are more likely to receive multiple drugs, and face difficulties with therapeutic compliance, increasing complication rates in medical intervention (Chung et al., 2015).

In view of the challenges of multimorbidity for health services, there is a need to classify comorbid health problems in terms of their relevance to clinical management. For example, ischaemic heart disease, cardiovascular risk factors including hypertension and hypercholesterolemia, and diabetes could be managed within the same primary care settings as they share similar aspects of disease management. Drawing together patients who have similar clinical management needs may be efficient. At the same time, an in-depth understanding of the interactions among comorbid diseases is crucial. For the same pair of comorbid conditions (e.g. diabetes and chronic obstructive pulmonary disease), some interventions can be antagonistic (e.g. consider the effect of hypoglycemic drugs and corticosteroids on blood glucose), others may be agonistic (physical activity), and others may be neutral. The current fragmentation of health care service delivery for older adults in Hong Kong should advance to a more comprehensive and multidimensional system of care.

2.2 Disability

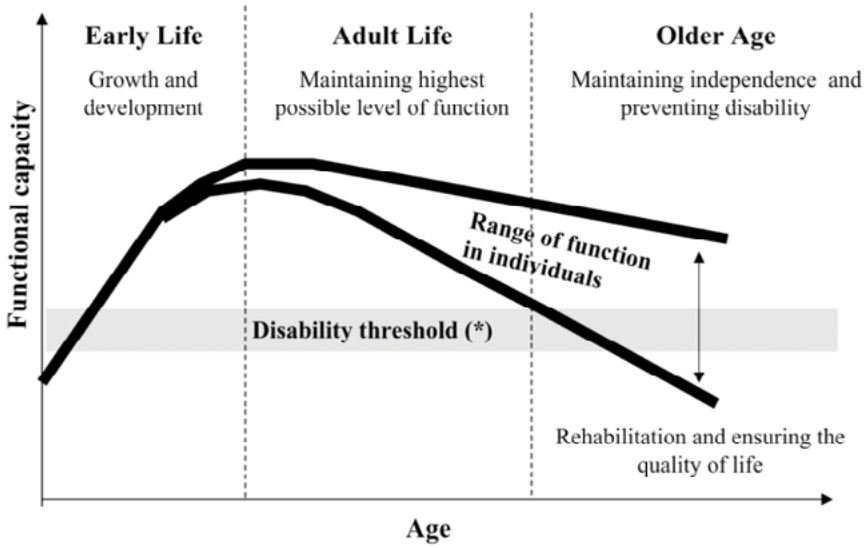
NCDs and comorbidity have become the leading cause of disability (Agyei-Mensah & de-Graft Aikins, 2010). Disability is an umbrella term covering impairments, activity limitations, and participation restrictions (WHO, 2017d). Impairment is a problem in body function or structure; activity limitation is a difficulty encountered by an individual in executing a task or action; while participation restriction is a problem experienced by an individual in involvement in life situations.

2.2.1 Disability and ageing

One of the consequences of an ageing population has been a rapid increase in the prevalence of disabling conditions (Division for Social Policy and Development, 2015). In Hong Kong, the overall prevalence rate of persons with disabilities was 8.1% in 2015, as against 5.2% in 2007 (Census and Statistics Department, 2015a). Analysed by age, 53.3% of the disabled persons were aged 70 and over, 16.6% were aged 60-69 and 12.3% were aged 50-59, reflecting that the increase in the overall prevalence rate of disability was partly attributable to the ageing. Similarly the trends in activities of daily living (ADL) in older adults living in Hong Kong are that disability increases with age, and that the increase is more prominent among the older age groups (Yu et al., 2016).

Figure 2.1 below shows a life-course approach to maintaining functional capacity (Kalache & Kickbusch, 1997). With advancing age, functional capacity in performing advanced (e.g. instrumental) and even basic (e.g. self-care) activities is becoming increasingly limited (Topinková, 2008). Functional capacity over the course of life reaches its peak in early adulthood and decreases steadily with advancing age. At a certain point of decline, it reaches the disability threshold. It is a result of the accumulation of health risks across a lifespan of disease, injury, and chronic illness among the older adults (Division for Social Policy and Development, 2015).

Figure 2.1 A life-course approach to maintaining functional capacity



Source: Kalache and Kickbusch (1997)

2.2.2 Determinants of disability

Though functional capacity inevitably declines in later life, the rate of decline is highly individual. It can be substantially modified both by personal factors (e.g. physiologic changes with aging and comorbid diseases and impairments) and environmental factors (e.g. social, behavioral and economic factors) (WHO, 2017f). Females have been found to be at a higher risk of developing disabilities than male counterparts. Studies suggest that the gender gap may be attributable to a complex set of socioeconomic, psychological, and biological factors such as health care access, lack of autonomy, physiological differences, physical activity, domestic violence, and other stressors encountered throughout the life course (Zunzunegui, Alvarado, Béland, & Vissandjee, 2009). In addition, those among Hong Kong community-dwelling older adults who have an education level of high school or above are less likely to report ADL limitation (Kee-Lee & Joe, 2008). Although education is largely completed by age 30, there are a number of possible health care and biological mechanisms that might reduce the probability of disability for better educated persons (Beatriz Eugenia, Ricardo, & Maria Victoria, 2007). Better educated people have access to better health care both early in life and in middle age. They are also more equipped to comply with complex and long-term medical treatments, especially for comorbidities, such as hypertension or diabetes.

Lifestyle factors are also significant intrinsic factors predicting disability in later life. Studies have demonstrated that improvement in major lifestyle factors including reduced tobacco and alcohol use, increased consumption of fruits and vegetables, and increased physical activity level are associated with a lower risk of disability (Ali et al., 2004; Schoeni, Freedman, & Martin, 2008). More interestingly, those who were obese were more likely to exhibit the onset of disability (Al Snih et al., 2007).

Environmental factors at a macro-socioeconomic level also play a role in individual physical functioning and disability at older ages (Beard et al., 2009; Freedman, Martin, Schoeni, & Cornman, 2008). First, a more affluent neighborhood or community contributes to a lower rate of disability since financially resourceful communities often enjoy a healthier physical environment. For example, greater green space (Ellaway, Macintyre, & Bonnefoy, 2005) and recreational areas (Wen & Gu, 2011), healthier food options (Dubowitz et al., 2008), and adequate health and social services (Andersen, 1992) contribute to a lower risk of developing disability. Second, several local interpersonal features including neighbourly trust, norms and social cohesion are associated with lower risks of disability. Thus social capital can delay onset of one's disability by influencing health-related behaviour through diffusion of health information and promoting social participation (Aida et al., 2012). Third, a more age-friendly environment including safe sidewalks and well-lit streets may lead to fewer injuries, better street connectivity, sidewalks, and kerbs can facilitate physical activities and access to health care facilities (WHO, 2002b). All these enabling environment factors promote functioning for daily activities (Gu, Gomez-Redondo, & Dupre, 2015).

2.2.3 Impact of disability

Apart from health and well-being consequences, disability is highly associated with unemployment and poverty in older adults. According to the data available from the Census and Statistics Department, 85.5% of all persons, and 97.9% of persons aged 65 and older, with disability were economically inactive, as compared to 27.2% and 92.1% respectively in the overall population (Census and Statistics Department, 2015a). This reflects that the ability to work of those with disabilities and their participation in labour market might have been hampered by their disabilities. As a result, nearly 80% of persons and 95% of older people with disabilities are covered by the social security system and such proportion is significantly higher than the figure in the overall population (16.7%) (HKSAR Government, 2013).

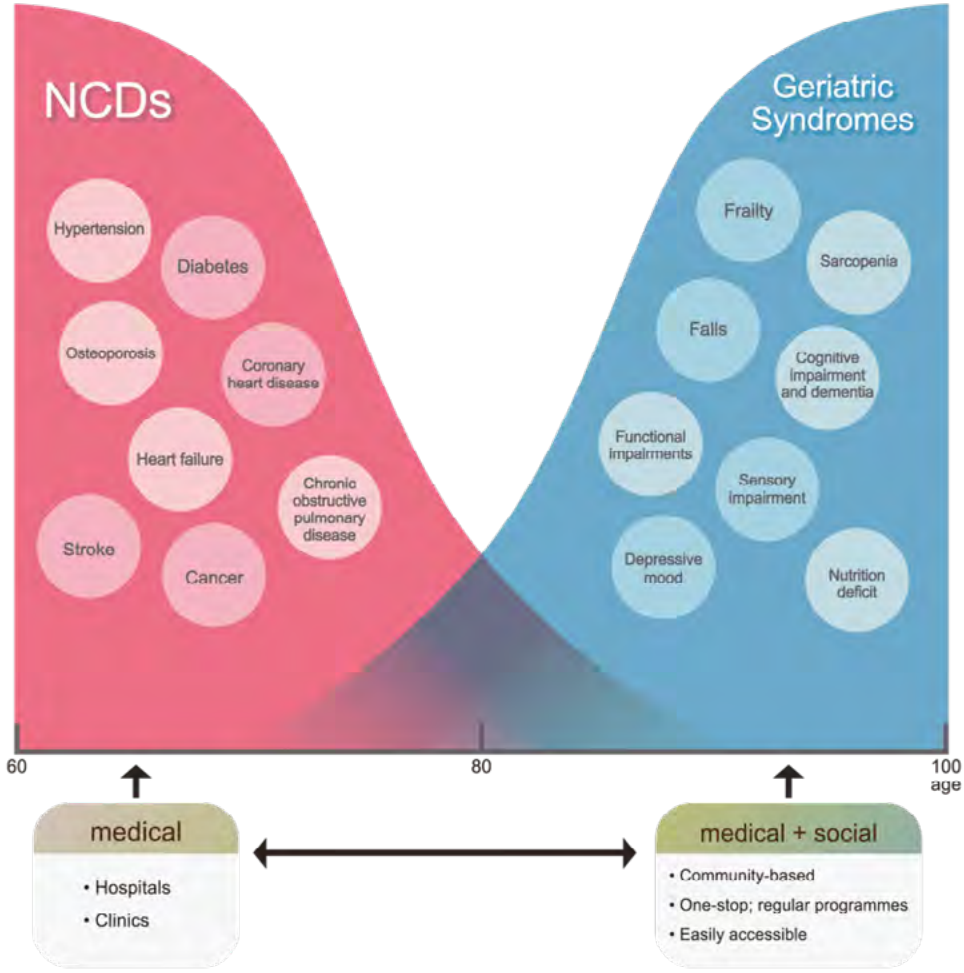
2.2.4 Implications of disability

The financial burden of functional disability on the healthcare service is substantial. Disability has been shown to increase healthcare expenditures and out-of-pocket payments (Gu et al., 2015). There was an increase in disability-adjusted life years in adult populations (Leonardi et al., 2014), reflecting an interrelationship between health service use, ageing and disability. Hence, health policy approaches that help older adults live independently, such as the increase in use of preventive services, and creation of age-friendly environments to optimise independent functioning should be implemented (Yu et al., 2012).

2.3 Geriatric syndrome and frailty

"Geriatric syndrome" is a term used to highlight unique features of common clinical conditions in older adults that do not fit into well-defined disease categories (Inouye, Studenski, Tinetti, & Kuchel, 2007). Examples include delirium, falls, incontinence and frailty. These geriatric syndromes are highly prevalent, multifactorial and associated with substantial morbidity and poor outcomes. Figure 2.2 illustrates that geriatric syndromes begin to replace NCDs as the major health problems among older adults as age increases.

Figure 2.2 NCDs and geriatric syndromes



Source: Woo (2017).

2.3.1 Definitions and characteristics of frailty

As a typical example of geriatric syndromes in older adults, frailty is conceptually defined as a clinically recognizable state of older adults with increased vulnerability, resulting from age-associated declines in physiologic reserve and function across multiple organ systems (Chen, Mao, & Leng, 2014). It represents a state of diminishing reserve in the capacity to respond to various environmental stressors.

Based on this conceptual definition, two major definitions with proposed assessment tools for frailty have emerged: (1) Fried's frailty phenotype and the (2) Rockwood's Frailty Index (Chen et al., 2014). Fried et al. defined frailty as meeting three out of five phenotypic criteria indicating compromised energetics: weakness measured by low grip strength, low energy or self-reported exhaustion, slowed walking speed, low physical activity level, and/or unintentional weight loss (Fried et al., 2001) (see Table 2.3). Presence of one to two phenotypic criteria represents a pre-frail stage, in which there is a high risk of progressing to frailty. Those with none of the above five criteria are classified as non-frail or robust. This definition recognizes frailty as a distinct clinical entity distinguished from disability (measured by impairment in ADL) and multimorbidity (defined by two or more diseases). All three conditions are predictive in varying degrees of adverse health outcomes, and therefore have a certain level of overlap. While many (but not all) frail individuals are disabled, not all disabled persons are frail. For example, older patients who suffer severe disability secondary to a major accident or stroke may maintain relatively intact

function in other physiological systems, and thus are not frail. On the other hand, if comorbid conditions worsen and are inadequately treated, these patients may develop frailty. Nevertheless, diseases and disability are definitely important confounding factors that deserve careful consideration in frailty assessment (Chen et al., 2014).

Table 2.3 Fried's frailty phenotype

Frailty Phenotypical criteria	Measurement
Weakness	Grip strength: lowest 20% (by sex, body mass index)
Slowness	Walking time/15 feet: slowest 20% (by sex, height)
Low level of physical activity	Kcal/week: lowest 20%
Exhaustion; poor endurance	Self-reported exhaustion
Weight loss	>10 lb lost unintentionally in prior year

Source: Fried, Tangen, Walston, et al (2001)

Separately, the Frailty Index (FI) was developed by Rockwood et al based on a comprehensive geriatric assessment by counting the number of deficits accumulated, including diseases, physical and cognitive impairments, psychosocial risk factors, and several common geriatric syndromes other than frailty (Jones, Song, & Rockwood, 2004). The criteria for a variable to be considered as a deficit are that the variable needs to be acquired, age-associated, associated with an adverse outcome, and should not saturate too early (Chen et al., 2014). Compared to Fried's definition, the FI appears to be a more sensitive predictor of adverse health outcomes, because of its more finely graded risk scale and inclusion of deficits that probably have causal relationships with adverse clinical outcomes (Rockwood & Mitnitski, 2007). While the FI may have clinical utility in risk assessment and stratification, the FI does not attempt to distinguish frailty from disability or multimorbidity. Instead, it includes them or their associated deficits (Chen et al., 2014).

2.3.2 Frailty and ageing

Frailty is more likely to occur in later life. A systematic review concluded that the overall weighted prevalence of frailty was 10.7% around the world, and that the prevalence increases with age (Collard, Boter, Schoevers, & Oude Voshaar, 2012). The situation is similar in Hong Kong. Using the FRAIL scale derived from the Fried's five phenotypes, it is estimated that the prevalence of pre-frailty and frailty among those aged 65 and above were 52.4% and 12.5% respectively (Woo et al., 2015). The prevalence of frailty increases by 3 times from among those aged 65–69 years to those over 75. Of those who were pre-frail or frail, almost half of them had sarcopenia. Another study using the Frailty Index determines the prevalence of frailty as 16.6% among the same age group of Hong Kong local population (Yu, Wu, Leung, & Hu, 2017). The prevalence also increases with more advanced age. Yet, frailty is not an inevitable part of ageing, but reversible (Lee, Auyeung, Leung, Kwok, & Woo, 2014; Yu et al., 2014).

The onset of frailty also appears to be occurring at progressively younger ages. In a study examining longitudinal trajectories of frailty among the older adults living in Hong Kong (Yu, Wong, et al., 2017), more recent cohorts were found to have higher levels of frailty than did earlier cohorts at the same age, after controlling for demographics, socioeconomic status, lifestyle and social factors. This indicates that frailty interventions, coupled with early detection, should be developed to combat the growing healthcare burden.

2.3.3 Risk factors for frailty

Aside from increased age, there are numerous socioeconomic and demographic factors influencing the risk of frailty. It was found that women were frailer than men (Collard et al., 2012). This is because older men are more likely to die suddenly, whereas women more often show a steady increase in morbidity and functional decline (Puts, Lips, & Deeg, 2005). Moreover, those with lower social status including lower education attainment, non-white collar occupations, inadequate financial resources and recipients of social assistance are more prevalent in frail individuals (Yu, Wong, et al., 2017; Yu, Wu, et al., 2017). The present finding may be explained by different views and expectations of social support and relationship quality, of individuals from different socioeconomic classes.

Frailty is also associated with multidimensional health conditions, including multimorbidity, depression, mild cognitive impairment, sarcopenia and functional disabilities (Woo et al., 2015). Among all, multimorbidity is widely recognized as the major predictor of frailty. This is mainly because the comorbid individuals tend to take greater amounts of medication (Coelho, Paúl, Gobbens, & Fernandes, 2015). Polymedication, especially with drugs for the cardiovascular system and for the blood and blood-forming organs, is greatly associated with frailty (Gnjidic et al., 2012)

Lifestyle factors, such as physical inactivity, smoking, alcohol consumption, and lower energy intake were more likely to be found among frail individuals (Woo et al., 2015; Yu, Wong, et al., 2017). Studies have revealed that physical exercise interventions have a positive effect on mobility and physical functioning (Gobbens & van Assen, 2016). A recent systematic review suggests that the underlying mechanism by which smokers are predisposed to frailty is unclear but is likely to be multifactorial given the detrimental effects of smoking on a wide range of organs and tissues (Kojima, Iliffe, & Walters, 2015).
With respect to macro-level determinants, physical and social environments also play a role in frailty. A longitudinal study reveals that greater green space area could improve frailty status, regardless of demographics, lifestyle, and other environmental characteristics (Wang et al., 2017; Yu et al.). Social support is another vital resource for frail people. It was found that the widowed and those living alone are more likely to have frailty. In addition, social support ranging from little contact with relatives or neighbours to no or infrequent participation in community or religious activities are all social determinants of frailty (Yu, Wu, et al., 2017).

2.3.4 Impacts of frailty

Characterized by the reduced functional reserve, frailty can lead to a high susceptibility to a poor health condition (Fried et al., 2001). The manifestations of frailty include decreased activity and engagement, anorexia, weight loss, fatigue, sarcopenia, osteopenia, balance problems, gait abnormalities, and cognitive impairment (Ferrucci et al., 2004; Fried et al., 2001). These can result in acute illness, falls (see Box 2.4 and Figure 2.3), injuries, disability, hospitalization, and institutionalization (Chan, Leung, & Woo, 2015; Ensrud et al., 2009; Graham et al., 2009). Further, frailty can strongly predict death. A study reveals a correlation coefficient greater than 0.95 between the frailty index and the risk of death (Koller & Rockwood, 2013). As such, frailty status is considered an estimate of biologic age, which has greater correlation with associated morbidity and death than does chronological age (Kulminski et al., 2008).

Frailty can reduce the psychological well-being and quality of life among older adults. In a cross-sectional analysis of data from the Canadian Study of Health and Aging, higher scores on a frailty index were associated with lower scores on the Ryff Psychological Wellbeing scale and its subscales, namely growth, mastery, positive relations, and self-acceptance (Andrew, Fisk, & Rockwood, 2012). In a longitudinal study conducted by the Centre for Cognitive Ageing and Cognitive Epidemiology in the United Kingdom, a reciprocal and inverse relationship between frailty and psychological wellbeing was found (Gale, Cooper, Deary, & Sayer, 2014). In addition, frailty may have a negative impact on health-related quality of life. The five frailty phenotypes have negative effects on all eight components of quality of life measured by the SF-36, namely physical functioning, social functioning, role limitations due to physical problems, role limitations due to emotional problems, mental health, vitality, pain, and general perception of health (Lin et al., 2011).

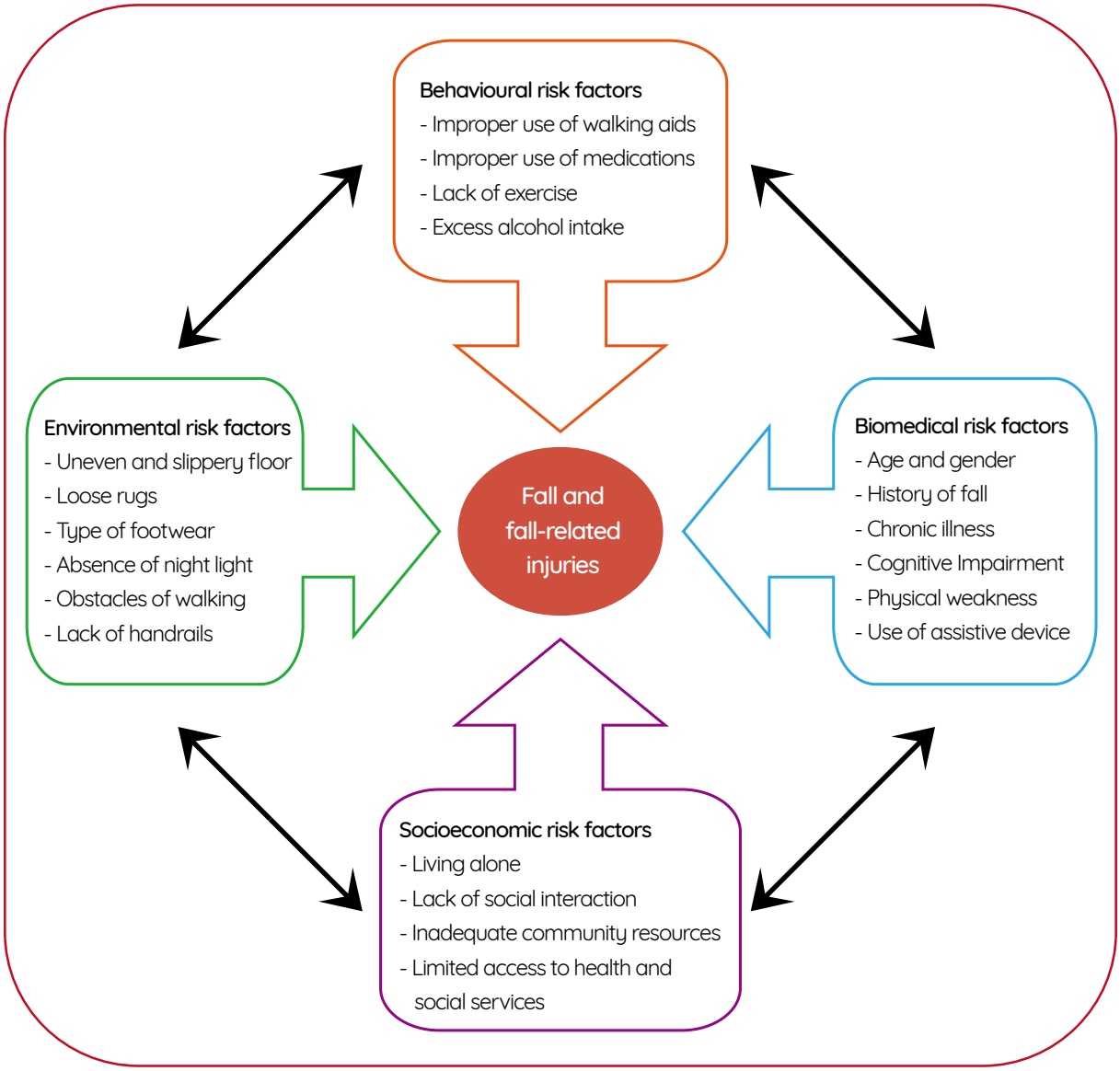
Box 2.4 Fall

The term "fall" refers to any event resulting in a person coming to rest inadvertently on the ground, floor or other lower level (WHO, 2017e). Fall-related injuries may be fatal or non-fatal though most are non-fatal. In Hong Kong, about one in five community-dwelling elders aged 65 and above fall every year, which becomes the principal cause of injury among older adults (Yeung et al., 2008). Although most falls are not fatal, many cases are severe enough to require medical attention (The Australian Commission on Safety and Quality in Health Care, 2009). For instance, fracture of the hip can result in immobility as well as decline in self-care ability and subsequent institutionalization among community-dwelling elderly people (Center for Health Protection, 2013). The rate of admission to long-term nursing homes after hospitalization for a fall-related hip fracture or injury is three times higher than that for non-fall-related hospitalizations (Gill, Murphy, Gahbauer, & Allore, 2013).

In addition to physical health problems, falls can also have psychological and social impacts on older people. Loss of confidence, diminished self-esteem, cutting down on daily activities or withdrawing from social activities due to fear of another fall are common symptoms among the victims. Population-based studies show that about half to two-thirds of the community-dwelling elderly had a fear of falls, and among these around half had a self-imposed restriction in their daily activities as a result (Center for Health Protection, 2013).

Falls do not "just happen", but very often occur as a result of a complex interaction of risk factors involving the elderly fallers and the environment (Center for Health Protection, 2013). As discussed, advanced age is one of the key risk factors. Older adults have the highest risk of death or serious injury arising from a fall and the risk increases with age. Other risk factors include biomedical (Campbell, Robertson, Gardner, Norton, & Buchner, 1999; Deandrea et al., 2010; Leipzig, Cumming, & Tinetti, 1999; The American Geriatrics Society, 2001; Ziere et al., 2006), behavioural (Ho, Woo, Chan, Yuen, & Sham, 1996; Podsiadlo & Richardson, 1991; Rubenstein, 2006), environmental (Gill, Williams, & Tinetti, 2000; Lord, Menz, & Sherrington, 2006) and socioeconomic risk factors (Fong, Siu, Yeung, Cheung, & Chan, 2011) (see Figure 2.3). Most of the risk factors are preventable, modifiable and are not a normal part of ageing.

Figure 2.3 Risk factors associated with falls among the elderly



Source: WHO Global Report on Falls Prevention in Older Age (2007)

2.3.5 Implications of frailty

A comprehensive geriatric assessment and individualized care intervention can be implemented. For primary prevention, the syndromes of frailty should be recognized and treated as early as possible (Chan, 2008). Based on Fried's concept, the interventions for frailty can centre on (1) exercise including resistance, strength, physical movement (gait and balance) training, and lingual exercise, (2) nutritional maintenance and/or supplement, (3) maintenance of oral health, (4) environmental modifications, and (5) family and professional caregiver education. For example, patients in the prefrail state could benefit from dietary supplements when combined with progressive resistance exercise if they are willing and able to participate (Chin, van Uffelen, Riphagen, & van Mechelen, 2008; Fiatarone et al., 1994). The goal of intervention is to minimize further weight loss, loss of muscle mass and strength, and reduce fall risk factors to help maintain a state of homeostasis (Fried, Ferrucci, Darer, Williamson, & Anderson, 2004).

In addition to these interventions, integrated palliative care including establishment of goals of care, symptom management and family support should be designed for older patients with frailty at any stage (Boockvar & Meier, 2006). In contrast to younger palliative care patients, who typically have predominant single-system diseases, the majority of frail older adults die with complex interacting chronic medical illnesses and symptoms (Burge, Johnston, Lawson, Dewar, & Cummings, 2002). An interdisciplinary team approach can ensure all components of palliation are effectively delivered, such as relieving symptoms, providing psychosocial and spiritual support, and improving quality of life (Raudonis & Daniel, 2010). In addition, patterns or trajectories of functional decline among frail patients should be monitored (Lunney, Lynn, Foley, Lipson, & Guralnik, 2003). When a poor prognosis is recognized with frailty, the next step is to establish treatment goals in collaboration with the older patient, family, and the interdisciplinary team (Raudonis & Daniel, 2010). Within the context of the established goals of care, palliative care interventions can be tailored to individual needs (Raudonis & Daniel, 2010).

2.4 Cognitive impairment and dementia

It is not uncommon for older adults to report symptoms of "memory loss", which in fact refers to a range of cognitive problems or to general cognitive decline, and not just memory loss. Dementia is a clinically significant condition diagnosed when acquired cognitive impairment has become severe enough to compromise social and/or occupational functioning. Mild cognitive impairment (MCI) is a state intermediate between normal cognition and dementia, with essentially preserved functional abilities.

2.4.1 Characteristics of cognitive impairment

A few common signs of cognitive impairment include the following: memory loss, frequently asking the same question or repeating the same story, not recognizing familiar people and places, having trouble exercising judgment, changes in mood or behaviour, vision problems, and difficulty planning and carrying out tasks. Cognitive impairment ranges from mild to severe. With mild impairment, people may begin to notice changes in cognitive functions, but still be able to carry out their everyday activities. By contrast, severe levels of impairment can lead to inability to understand the meaning or importance of something and the ability to talk or write, resulting in the inability to live independently (Centers for Disease Control and Prevention, 2010). These symptoms are strongly related to the clinical diagnosis of later development of dementia, which will be discussed further in the next chapter.

Age is the greatest risk factor for cognitive impairment. After age 65, the number of people living with cognitive impairment is expected to rise dramatically (Donnelly et al., 2016). It is estimated that around one in ten of the population aged 70 or above living in Hong Kong suffer cognitive impairment (Department of Psychiatry, 2013; Lee et al., 2014). The number is likely to increase as the population ages. However, the prevalence might be underestimated because the general public can hardly distinguish between the signs of normal ageing and mild cognitive impairment, which is a distinct medical condition that is more serious than memory loss associated with ageing. General differences between memory loss caused by normal ageing, and cognitive impairment, are listed in Table 2.4. Understanding these differences is extremely important since dementia is untreatable but preventable in the early stages.

Table 2.4 Differences between memory loss caused by normal ageing and disease-related factors

	Normal ageing	Cognitive impairment
Content of an experience	Partly forgotten	Wholly forgotten
Retrieval of the content being forgotten	Usually can recall the content afterwards	Rarely can recall the content afterwards
Following verbal or written instructions	Usually can follow without difficulty	Gradual decline in the ability to follow instructions
Making judgments	Intact ability	Having difficulty in making judgment
Insight towards memory loss	Awareness of having such problem	No insight or denial of having such problem
Self-care ability	Intact ability	Gradual deterioration

Source: Department of Psychiatry of the Chinese University of Hong Kong (2013)

However, some causes of cognitive impairment are related to health issues that may be treatable, such as medication side effects, vitamin B12 deficiency, depression and most likely lack of physical activity. In a local study, participants with exercise habits of 5 years or more showed better cognitive and functional performances at follow-up (Leung et al., 2010). Various types of physical activities including endurance exercises and stretching exercises, and also mental activities, are protective against the development of significant cognitive impairment and thus may help enhance the cognitive functions of the elderly (Department of Psychiatry, 2013). Last but not least, cognitive training could be provided to affected elders to improve their cognitive skills including attention, working memory and problem solving (Frank & Konta, 2005).

2.4.2 Dementia and Ageing

Dementia is a neurocognitive disorder characterized by irreversible and progressive deterioration of cognitive functioning, such as memory, reasoning, language expression, attention, and problem solving. Patients with dementia will lose their self-care capability and some may develop behavioural and psychological symptoms, for example, agitation, irritability and changes in personality. Dementia is distinct from normal ageing and its diagnosis indicates a decline in a person's normal mental capability greater than that expected due to aging.

Age is the most well-known risk factor for dementia, in that prevalence and incidence double with every five year increase in age (Lobo et al., 2000). In Hong Kong, the prevalence of clinically diagnosed dementia among community-dwelling older adults was investigated. Chiu et al (1998) found that the prevalence of dementia among older adults aged 70 and above was 4.5%. Another study (Elderly Commission of HKSAR, 2006; Lam et al., 2008) found 7.2% of older adults aged 60 and above and 9.3% of those aged 70 and above had dementia. Regarding the trend in prevalence of dementia among older adults in Hong Kong, Yu et al (2012) projected that the number of older adults with dementia will triple (i.e. from 103,433 in 2009 to 332,688 in 2039), with around 18% of those living in institutions. These findings highlight the importance of promoting modification of risk factors and early detection of the disease in ageing Hong Kong.

2.4.3 Risk factors for dementia

Apart from advanced age, there is a wide range of risk factors for dementia. The Lancet Commissions of "Dementia prevention, intervention, and care" (Livingston et al., 2017) suggested that around 35% of dementia is due to a combination of nine risk factors: education to a maximum of age 11-12 years, midlife hypertension, midlife obesity, hearing loss, late-life depression, diabetes, physical inactivity, smoking, and social isolation. Other risk factors include sociodemographic (being female and low socioeconomic class) and medical variables (heart disease, stroke, Parkinson's disease, family history, traumatic brain injury, and functional disability). In addition, the environmental impact on dementia has been investigated and these findings provide new insights into the prevention of dementia (see Box 2.5).

Box 2.5: Environmental risks and dementia

Researchers have recently started looking into environment risk factors for dementia. A systematic review by Killin, Starr, Shiue, & Russ (2016) found that air pollutants (such as NOx and particulates), aluminum, silicon and silica, exposure to pesticides and solvents, and electric and magnetic fields are risk factors for dementia. Recently, Chen et al (2017) found an association between residential proximity to major roadways and the incidence of dementia, suggesting that living closer to major roads is related to higher incidence of dementia (after taking into account of effects of socioeconomic status and living style). Additional analysis suggested that concentration of PM2.5 and NO2 might play a role in this association, in that that living near major roads exposes individuals to these traffic-related pollutants and thus increases their risk of developing dementia. Evidence exists that traffic-related pollutants are associated with lower cerebral blood flow (Wellenius et al., 2013) and cognitive impairment (Power et al, 2011). These studies provide evidence of the environmental risk factors on dementia, which have profound implications for urban planning and public mental health.

Recently, it has been suggested that some risks factors, including cardiovascular diseases, psychiatric factors, diet, education and lifestyle are potentially modifiable (Norton, Matthews, Barnes, Yaffe, & Brayne, 2014). Modifying these risk factors, including management of metabolic, cerebrovascular, hearing and mental health, and also living environment, could postpone the onset of dementia, creating huge implications for healthcare and social costs.

Chapter 3

Mental Health and Psychological Well-being of Older Adults in Hong Kong

Just as important as physical health, mental health and psychological well-being should be an essential component of health status in old age. Contrary to the high rankings of the indicator of life expectancy at 60 and healthy life expectancy at 60 in the Global AgeWatch Index for Hong Kong 2015, the ranking of the indicator of relative psychological well-being is 79 (out of 97 countries and territories). This is an alarming signal of poor mental health and psychological well-being among older adults in Hong Kong. This chapter discusses common mental disorders in old age and issues of psychological and also social well-being among older adults, with reference to research findings in local older adults.

3.1 Mental health in old age

Depression is a mental health problem commonly found in older adults. These disorders greatly reduce the well-being of older adults and their caregivers. They also incur great social and economic costs. Prevention of, and intervention in, these mental disorders might promote better mental health in older adults.

3.1.1 Depression

Symptoms of depression in older adults include depressed mood, fatigue, muscle ache, sleep disturbance, loss of sense of worthiness, withdrawal from people and interests they enjoyed previously, psychomotor retardation and cognitive decline. In addition, depression often co-occurs with cognitive impairment (e.g. Fuhrer et al., 1992) and it can be a risk factor for dementia (Schweitzer, Tuckwell, O'Brien, & Ames, 2002). Depression is related to decrease in physical health, cognition and social functions, increased risk of suicide and increased mortality (Blazer, 2003). Depression is also related to shortened telomeres, a marker for biological ageing (Yu & Woo, 2015). The prevalence of depression in community-dwelling people aged 65 and above ranges from 1% – 5% of people in the United States (e. g. Hasin et al., 2005; Eden et al., 2012), while clinically significant depressive symptoms are found in around 15% of them (Blazer, 2003).

The investigation of risk factors for late-life depression follows a life-long perspective. Genetic biological, psychological and social vulnerability and their interactions help with the understanding of the occurrence and maintenance of late-life depression. While the genetic is less likely to play a dominating role in later lifespan, the influence of social stress and deterioration of physical health that occurs often in old age could be main contributing factors. For example, social risks in old age such as inadequate social support and stressful life events (such as bereavement) make older adults prone to depression. Also, loneliness is associated with depression in old age (Nolen-Hoeksema & Ahrens, 2002). Additionally, depression is more common among patients with cardiovascular disease (Carney & Freedland, 2003), type II diabetes (Li et al., 2008), sleep disturbance (Perlis et al., 2006), and functional impairment (Goodwin & Devanand, 2008). Deterioration in physical health, increase in social isolation, offering care to others, financial strain, exposure to unsupportive and unsafe neighbourhoods, are all common stressors experienced by older adults, contributing to their vulnerability to depression. These common risk factors are also risk factors for anxiety disorder (Vink, Aartsen, & Schoevers, 2008) (see Box 3.1 for more information about late-life anxiety disorders).

Psychological and social factors could buffer against those risk factors for development of late-life depression. Understandably, good health, good cognitive function and socioeconomic status can buffer against stressors in old age. More importantly, meaningful engagement, such as establishing connections with the community, employment, and volunteering, play a significant role in protecting older adults from depression. Engaging in active behaviours to improve health is also related to alleviating depression (Wrosch et al., 2007). Additional psychological factors such as a positive self-concept, better emotion regulation and a sense of mastery buffer the effects of stressful events in older adults.

Box 3.1: Anxiety disorder in old age

Often coexisting with depression disorders, anxiety disorders are also common in older adults. A US national study found that the average lifetime prevalence rate of any anxiety disorder was 15.3% among adults aged 60 and above (Kessler et al, 2005). For specific anxiety disorders, specific phobia (prevalence 7.5%), social phobia (prevalence 6.6%) and generalized anxiety disorder (prevalence 3.6%) are more common among them (Kessler et al, 2005). Late-life anxiety is associated with increased usage of primary healthcare, higher disability and mortality; and lower quality of life (e.g. van Hout et al., 2004; de Beurs et al., 1999). Regarding symptoms of anxiety disorders, older adults tend to worry more about their physical health (Roemer, Molina, & Borkovec, 1997) and fear more about being a burden on others (Kogan, Edelstein, & McKee, 2000). Review by Vink, Aartsen, & Schoevers (2008) found that there is a considerable overlap between risks factors for anxiety and depression in old age. Although anxiety symptoms are more common than depressive symptoms in old age, late-life anxiety disorders are under-studied, especially in Hong Kong. One recent study (Fung et al., 2017) revealed that 8% of Hong Kong people aged 60 – 75 had anxiety disorder, which was higher than the prevalence of depression (1.7%).

Studies of prevalence of late-life depression in Hong Kong are listed in Table 3.1. These studies revealed that depression in older adults in Hong Kong is as prevalent as in Western countries (i.e. 11%- 20%; Katona, 1991). Consistent with the Western literature, prevalence of depression in older adults in Hong Kong increases with age (Chou & Chi, 2005). Late-life depression in Hong Kong is associated with poorer physical and self-rated health, impairment in activities of daily living, less social support, loneliness, financial difficulties and experiences of stressful life events (e.g. Woo et al, 1994; Chou & Chi, 2005; Chan et al, 2012; Chi et al., 2005). Chi and Chou (2000) also confirmed that depressive symptoms predicted impairment in cognitive functions three years later. In particular, higher satisfaction with support from the social network, more frequent contact with relatives, and more material aid and instrumental support are associated with lower depressive symptoms in Hong Kong older adults (Chi & Chou, 2001). Noting that depression is a significant predictor of suicide, Hong Kong's high suicide rates among the elderly could be reduced by prevention and management of life-late depression (see Box 3.2 for elderly suicide in Hong Kong).

Table 3.1 Selected studies of prevalence of late-life depression in Hong Kong

Source:	Diagnostic criteria	Sample characteristics	Age	Prevalence in male	Prevalence in female
Chan et al (2012)	GDS ≥ 8	Older adults living in the community	65+	7.1%	7.6%
Chou & Chi (2005)	GDS ≥ 8	Older adults living in the community	60+	19.0%	23.6%
Woo et al (1994)	GDS ≥ 8	Older adults receiving financial assistance	70+	29.2%	41.1%
Chi, Chiu, Chan, & Conwell (2005)	GDS ≥ 8	Older adults living in the community	60+	11.0%	13.7%
Li et al (2004)	GDS ≥ 8	Older adults who were members of elderly health centres	65+	4.9%	7.9%
Liu et al (1993)	CES-D ≥ 20	Older adults living in the community	65+	11%	15%

Note: GSD – Geriatric Depression Scale; CES-D- Center for Epidemiologic Studies Depression Scale

Box 3.2: Elderly suicide in Hong Kong

Depression is one of the predominant risk factors for suicide, and suicide in old age is more strongly correlated with depression than in other age groups (Conwell & Brent, 1995). According to the statistics by the Hong Kong Jockey Club Centre for Suicide Research and Prevention (2017), the University of Hong Kong, the suicide rate of Hong Kong people aged 65 and above in 2015 is 24 per 100,000, which is much higher than the all-age average of 12.6 per 100,000. Suicide death of those aged 65 and above represents around 30% of the total suicide deaths. Previous studies (e.g. Yip, Chi, & Yu, 1998) also noted high suicide rates among older adults (in particular for females) in Hong Kong compared with other countries. Older adults who are economically inactive and unmarried, suffer from chronic diseases or terminal illness, and live in crowed districts are more likely to commit suicide (Chi, Yip, Yu, & Halliday, 1998).
While suicidal ideation is predictive of a future suicide attempt, Yip et al (2003) found that 5.5% of the Hong Kong people aged 60 and above expressed a wish to commit suicide, and that those who reported more diseases, had vision and hearing problem, were involved in a court case and depressed were more likely to have d suicidal ideation. To reduce the suicide rate of Hong Kong older adults, intervention targeting older adults' mental health and psychological well-being may be useful.

3.2 Psychological well-being in old age

The mainstream and scientific understanding of psychological health in old age has long been dominated by a disease-based approach (also known as a "deficit-oriented approach"), that examined primarily suboptimal cognitive, emotional and social functioning. In recent years, however, more research attention in ageing has been invested into understanding its brighter sides. The area gained further traction with the accumulation of evidence suggesting the potential for psychological well-being to be a protective factor for health (Steptoe, Deaton, & Stone, 2015), resulting in a significant and growing body of research focusing on the psychological well-being of older adults.

3.2.1 Definitions of psychological well-being

Psychological well-being has been studied in terms of three aspects: evaluative well-being, hedonic well-being, and eudemonic well-being (Steptoe et al., 2015). Evaluative well-being refers to people's thoughts about how satisfied they are with their lives. A vast majority of research in this domain measured evaluative well-being using the Satisfaction with Life scale (Diener, Emmons, Larsen, & Griffin, 1985). Hedonic well-being refers to everyday moods or experienced feelings, such as happiness, sadness, and anger. It is typically measured using ratings on positive and negative emotional adjectives and conceptualized as two different dimensions. Eudemonic well-being refers to judgments about the meaning and purpose of one's life. A commonly used scale for measuring this construct is Ryff's psychological well-being scale, which measures constructs such as purpose in life, personal growth, and environmental mastery (Ryff, 2013).

Empirical research on the age-related trajectories of evaluative and hedonic aspects of well-being is more clear-cut than that on eudemonic well-being. Barring a handful of deviations, most studies on evaluative well-being have been consistent in finding a U-shape function over the lifespan that decreases from around age 30, coming to a nadir in the mid-50s, and then recovering gently back to its previous levels beyond that age (Blanchflower & Oswald, 2004, 2008). As for hedonic well-being, its two dimensions (i.e. positive and negative emotions) have been found to show distinct trajectories over the lifespan. Positive emotions such as enjoyment and happiness remains generally constant from early twenties to mid-eighties, whereas negative emotions such as stress, worry, and anger shows a downward trajectory over the same age range (Stone, Schwartz, Broderick, & Deaton, 2010) (see Box 3.3). By comparison, the age-related trajectory exhibited by eudemonic well-being is relatively unclear. Although some early evidence suggested that older adults reported lower purpose in life and personal growth compared to young or middle-aged adults (Clarke, Marshall, Ryff, & Rosenthal, 2000), these findings were only confirmed to a limited extent by longitudinal evidence (Springer, Pudrovska, & Hauser, 2011).

Box 3.3: Does emotional well-being improve with age?

While ageing often goes hand in hand with declines in physical and cognitive health, age-related losses in the social and emotional aspects are much less substantial. In some cases, there can even be gains. Findings of this nature are best represented by research efforts inspired by the Socioemotional Selectivity Theory (SST; Carstensen, Isaacowitz, & Charles, 1999). The SST proposes that as people approach the end of their lives, their sense of time left becomes more limited, which makes them less motivated to pursue future-oriented goals, such as those associated with seeking novel information and new social relationships, and more motivated to pursue present-oriented goals, such as those associated with maintaining current relationships and regulating their own emotions. This theoretical perspective has since been supported by a substantial body of empirical work (Carstensen, Fung, & Charles, 2003). Studies found that while older adults not only feel as much positive emotion as younger people, they experience less negative emotion (Charles, Reynolds, & Gatz, 2001). The higher reports of relational and emotional satisfaction might be due to age-related gains in social expertise, as well as intentional optimization of their relationships with preferred social partners (Luong, Charles, & Fingerman, 2011). In all, there is some consensus that emotional well-being increases with age, and can even result in some positive spillover effects into other aspects of functioning, such as cognition (Mather & Carstensen, 2005).

3.2.2 Psychological well-being and physical health

Much has been learnt about the link between psychological well-being and physical health in recent years. The earlier notion that psychological distress can be harmful for physical health has, in more recent years, been complemented by the perspective that positive psychological well-being can be a protective factor for physical health. Early observational studies have found that both positive life evaluations and positive hedonic states (such as happiness) can predict lower future morbidity and mortality (Chida & Steptoe, 2008). Furthermore, emotional well-being was found to predict more functional independence and survival in a two-year follow up (Ostir, Markides, Black, & Goodwin, 2000) and lower incidence of frailty in a seven-year follow up (Ostir, Ottenbacher, & Markides, 2004). It was also found that those positive effects were associated with reduced mortality in both the healthy and diseased population (Chida & Steptoe, 2008). Eudemonic well-being can also be a protective factor for physical health. A study of Finnish older adults aged 64 to 85 years found that self-reported meaningfulness of life was significantly related to regular and intensive physical exercise (Ruuskanen & Ruoppila, 1995). It was also observed that subjective indicators of purpose, meaning, and growth were accompanied by better regulation of physiological systems, indicated by salivary cortisol, proinflammatory cytokines, and duration of REM sleep. Hedonic well-being, on the other hand, demonstrated minimal associations with these biomarker assessments (Ryff, Singer, & Dienberg Love, 2004), highlighting the unique health-related benefits associated with eudemonic well-being.

3.2.3 Psychological well-being of older adults in Hong Kong

Well-being of older adults in Hong Kong has been considered from a variety of perspectives. Many studies that addressed this issue examined the linkage between social relationships and subjective well-being. This interest might reflect the view that relationships play important roles in Chinese societies, and consequently the psychological well-being of their people. Siu and Phillips's (2002) study conducted among older women in Hong Kong found that support from both family and friends is positively related to psychological well-being. The precedence of family-based support over nonfamily-based support (e.g., friends, neighbours) in influencing older adults' well-being was also noted in other studies (e.g. Cheng, Li, Leung, & Chan, 2011; Cheng, Lee, Chan, Leung, & Lee, 2009; Lam & Boey, 2005). Another common thread in this body of research was that both emotional and instrumental support matter for older adults' psychological well-being. These findings attest to the importance of family-based support for older adults in Hong Kong, and raise the question whether over-reliance on a single form of support can constitute a potential vulnerability. Hence, community-based support capable of hedging against this vulnerability can be a potentially valuable safeguard for the psychological well-being of older adults in Hong Kong.

Not surprisingly, living conditions also contribute to older adults' psychological well-being. Poorer dwelling conditions, indicated by both interior and exterior environments, were associated with poorer subjective well-being, through lower residential satisfaction (Phillips, Siu, Yeh, & Cheng, 2005). Life satisfaction, one aspect of psychological well-being, can also be compromised by financial strain, but its detrimental impacts can be buffered by life management strategies that older adults use to meet challenges in late life (Chou & Chi, 2002). The negative impact of financial strain on older adults' life satisfaction was further confirmed in a longitudinal study (Chou & Chi, 1999). Unsurprisingly, good physical health is positively related to psychological well-being among Hong Kong older adults. Furthermore, life satisfaction was found to be negatively predicted by chronic illnesses and functional impairment (Chou & Chi, 1999). In addition, social factors such as social support were as important as physical factors, such as health, vision, and hearing, in contributing to life satisfaction of older adults in Hong Kong (Ho, Woo, Lau, & Chan, 1995).

3.3 Loneliness in old age

Loneliness is a subjective, negative emotion, arising from the discrepancy or mismatch between our desired and actual social relationships in terms of both quantity and quality (Perlman and Peplau, 1981). It is closely related to concepts like social isolation and exclusion, which are measured by objective means, but is distinct from them. Under this distinction, it is possible that people having a regular level of social contact might still feel lonely. Loneliness in old age seems to be a common phenomenon across populations. In China, the reported prevalence of loneliness was around 30% (Yang and Victor, 2008). In the UK, 30-35% of people aged 65 and above reported feeling lonely (HelpAge, 2010). In the US, 20-40% of aged 65 and above occasionally felt lonely, and 5-15% of them frequently felt lonely (Pinquart, & Sorensen, 2001).

Feeling lonely is a universal experience; however, chronic and persistent loneliness is a physical and mental health concern. Loneliness predicts a higher mortality risk (Holt-Lunstad et al., 2015), a higher risk of coronary heart disease and stroke (Valtorta et al., 2016), and a faster rate of cognitive decline (Donovan et al., 2016). Specifically, lonely elderly are more likely to develop Alzheimer's Disease and clinical dementia (Wilson et al., 2007; Holwerda et al., 2012). Yet, despite the apparent overlap in common features of depression and loneliness, they appear to be distinct phenomena (Weeks et al., 1980). Boivin, Hymel, & Bukowski (1995) explained that whereas loneliness involves appraisals of one's social domain of life, depression is a more holistic and heterogeneous condition including appraisals across multiple domains. Furthermore, it is observed that loneliness plays a crucial role in the development of depression (Green et al., 1992).

Loneliness has complex causes. In addition to an elderly person's physical and mental health status, psychological, social, and situational factors may also affect loneliness directly and indirectly, e.g. via social isolation. Elderly loneliness is associated with a sense of helplessness from declining physical and mental functions, a sense of worthlessness from not having a role in the outside world, and increased social isolation as their social and support network diminishes (e.g. AgeUK, 2010; Banks et al., 2006; Victor et al., 2000). Therefore, certain groups of older adults are especially vulnerable to feeling lonely, such as those who suffer from chronic diseases, who come from lower socio-economic backgrounds, are recently retired, are widowed, and are physically isolated due to mobility or geographical restrictions.

Interventions that address these known pathways into elderly loneliness focus on increasing older adults' social contact, changing their cognitive appraisal, enhancing emotional support for them, and identifying ways for them to have meaningful engagement in their lives (Mann et al., 2017). Increasingly, cities and countries worldwide are evaluating elderly loneliness and investing in interventions to address this issue. Loneliness has been included in the Age-friendly City evaluation guide for Canada as one of its four health and social outcome measures (Public Health Agency of Canada, 2015), while in Manchester, UK, improving relationships through tackling loneliness and social isolation is a key element in one of three cross-cutting themes that drive all their age-friendly initiatives (Buffel et al., 2016). In terms of interventions, the US's national campaign jointly organized by the National Association of Area Agencies on Aging (n4a) and the AARP Foundation was launched in 2016 to raise awareness of social isolation and loneliness among the elderly. They have also launched an initiative 'Connect2Affect' to specifically address the issue through research and innovation.

Currently, there is very little research that examines loneliness in the ageing population in Hong Kong. Most recently, the CUHK Jockey Club Institute of Ageing has interviewed 1200 randomly selected adults aged 50 and above about the degree of loneliness they felt in the past week. It found that 30% reported sometimes feeling lonely, 17% occasionally, and 7% often, revealing the prevalence of the problem. To combat elderly loneliness in Hong Kong, both the potential threats to older adults and the protective factors that buffer against their loneliness need to be well understood and addressed. In addition, vulnerable groups suffering from, or at risk of developing, loneliness should attract special attention. These may include older adults who are recently widowed and living alone, on low income, giving care to elderly spouse or relatives, and living in residential care homes. A qualitative study by Lou and Ng (2012) examined living-alone older adults' resilience to loneliness and found that they coped with their sense of loneliness by forming meaningful engagements and maintaining their non-kin relationship network. A more comprehensive evaluation of elderly loneliness in Hong Kong to investigate its risks and coping strategies would be an important first step towards this goal.

In addition, evidence-based research and evaluation of loneliness reduction interventions in Hong Kong are much needed in order to develop such insights and to identify effective pathways into reducing loneliness among older adults. In line with promoting an age-friendly environment, identification and intervention targeting loneliness would be an important initiative for ageing Hong Kong (see Box 3.4 for an example of loneliness intervention for older adults in Hong Kong).

BOX 3.4: Pursuing meaningful goals as an intervention to reduce older adults's loneliness in Hong Kong

Loneliness in old age could be a result of disrupted meaningful engagement (Smith, 2012). Helping older adults develop meaningful engagements in daily life could be effective in reducing their loneliness. The CUHK Jockey Club Institute of Ageing embarked on an intervention program that combines place visits with group-based reminiscence activities. This intervention attempts to reduce participants' loneliness by rebuilding social connections and encouraging deeper interactions among participants as they revisit places with historical, cultural, and personal significance, and reminisce collectively by exchanging tales and memories of the past. The 11-week intervention programme involved community-dwelling older adults residing in Tai Po, and they took guided tours to famous spots in Tai Po, such as the Hong Kong Railway Museum and Lam Tsuen. After the visit, participants reflected upon their past and current life in relation to the site, as a group. Through rebuilding the participants' social ties and reminding them of the sources of meaning in their lives, we hope to see their loneliness reduced.

Chapter 4

Improving the Health Status of Older adults: An Overview of Policy Initiatives in Hong Kong

In view of the growing prevalence of NCDs, geriatric syndromes and mental health problems, implementing suitable healthcare and community health policies is essential for maintaining the quality of life among the ageing population. In addition to delivering medical services in healthcare and clinical settings, the involvement of community stakeholders has been emphasized. Integration between medical and community services and the concept of 'ageing in place' have been adopted by the HKSAR government and other community partners.

4.1 Medical service delivery

Since many chronic diseases are preventable at an early stage, strengthening primary and preventive care and chronic disease management, as well as promoting public-private partnership at primary care level, are the key goals of the Elderly Health Service of the HKSAR government (Legislative Council, 2010). At the same time, quality of life among terminally ill patients at the end of life has been emphasized in recent years. There is a strong public concern over the service delivery of end-of-life care.

4.1.1 Primary health care

In March 2008, the Food and Health Bureau (FHB) released a set of healthcare reform proposals in Your Health, Your Life: Healthcare Reform Consultation Document, attaching a great importance to primary care, the foundation of healthcare systems (Food and Health Bureau, 2008). In the same year, the Working Group on Primary Care was set up to develop primary care in Hong Kong (Yeoh, 2017). Several elderly healthcare programs in primary care are implemented by FHB and Hospital Authortiy (HA), aiming at catering to the heterogeneous needs of our older population.

Multi-disciplinary Risk Factor Assessment and Management Programme (RAMP)

In view of the rapidly growing prevalence of NCDs, the Chronic Disease Management Programme is proposed to target patients with hypertension and diabetes mellitus by a multi-disciplinary risk assessment and management programme at special outpatient clinics in the public healthcare system (Food and Health Bureau, 2010). Since August 2009, multidisciplinary teams of healthcare professionals including doctors, nurses, dieticians and pharmacists have been formed in all seven clusters of the HA in Hong Kong. The multidisciplinary team aims to deliver comprehensive health risk assessments, preventive and follow-up care for hypertensive and diabetic patients in 23 general out-patient clinics (GOPCs) (Food and Health Bureau, 2010). Evaluation studies support the effectiveness of RAMP. Compared with usual care groups, diabetic patients participating in the programme had a lower incidence of cardiovascular complications and lower all-cause mortality rates (Jiao et al., 2015), while hypertensive patients could better maintain targeted blood pressure level and had reduced CVD risk (Yu, Wan, et al., 2017). A total of 144,500 patients, particularly the older adults with the highest prevalence of diabetes and hypertension, had benefited from the programme by 2012-13.

Nurse and Allied Health Clinics (NAHC)

As the name suggests, clinics comprising nurses and allied health professionals were introduced in certain GOPCs located in all seven HA clusters. More focused and specific forms of care were offered including fall prevention, handling of chronic respiratory problems, wound care, continence care, drug compliance and supporting mental wellness for individual patients (Food and Health Bureau, 2010). The total number of attendances was around 217,400 by 2011-12. This model of care has been launched in the United Kingdom, Australia, Canada and the United States, integrating nurses and allied health professionals into routine practice in primary care (Yeoh, 2017). Evaluation is an essential part of the programme in order to inform future policy. The Department of Family Medicine and Primary Care of the University of Hong Kong has been appointed by HA to carry out the programme evaluation (Lam, 2014).

Elderly Suicide Prevention Program

Apart from physical health, mental health problems, especially suicidal thoughts, among the old indicate a need for healthcare services. Several pieces of evidence clearly underpin the importance of tight collaboration between physiatrists and primary care physicians, because of the high prevalence and the help-seeking behaviour of individuals with depression and suicidal thought (Yip, Chi, & Chiu, 2013). It is impossible for specialist services to provide care for all of these vulnerable older individuals (Hospital Authority, 2011). Therefore, the Psychogeriatric Team Outreach Services of HA started the Elderly Suicide Prevention Program in 2002 through public education of the public and community involvement of NGOs. The programme focuses on early detection of depression, assessment and intervention on a home basis. The purposes of the program are (1) to conduct fast risk assessment and management and crisis intervention, (2) to enable referral to Mental Health Services from community gatekeepers, (3) to monitor at-risk cases in the community by means of a Suicide Prevention Nurse, (4) and to provide an educational program to help professionals in the detection of depression in elderly clients (Lui, Au, Tsue, & Ho, 2007).

Practically, this suicide prevention program adopts a clinical case management approach through a multidisciplinary team of mental health professionals. The Suicide Prevention Nurses makes follow-up phone calls to clients within 2 days after case acceptance and a home visit within 7 working days to provide a comprehensive assessment of social and mental condition, physical health, activities of daily living and functional impairment (Hospital Authority, 2011). The referral will be made to a Fast Track Clinic while peer review and individual care plans are conducted regularly. This program has so far provided 37,391 attendances at fast-track clinics. Clients' depressive symptoms and suicidal thoughts were found to be improved in a half-year follow-up.

4.1.2 Public-private partnership (PPP)

In response to the private-public split and the relatively weak primary healthcare services provided by the public sector, the Government since 2008 has taken forward, through the Department of Health (DH) and the Hospital Authority (HA), various initiatives in enhancing the collaboration of the private sector with the public sector, in particular targeting the older population (Food and Health Bureau, 2010). A working group was set up by the HKSAR government to promote the private-public partnership (PPP), bringing private general practitioners into the public sector. The public sector, thus, can devote greater resources to developing the more expensive tertiary and secondary care, and provide better hospital and specialist services to the general public (Yeoh, 2017). Details of the Patient Empowerment Programme, General Outpatient Clinics-PPP, and Elderly Health Care Voucher Scheme are discussed in detail below, while Table 4.1 lists extra examples of PPPs (Hospital Authority, 2017).

Table 4.1 Summary of several projects involving PPPs in Healthcare

Programme	Description
Cataract Surgery Programme	- Eligible patients on HA's waiting queue for cataract surgery are invited to participate in this Scheme. - HA provides a one-off $5,000 subsidy for participating patients to receive cataract surgeries in the private sector. Private doctors may charge no more than $13,000 for each surgery, meaning that the patients only have to pay at most $8,000. For recipients of CSSA or those coming from low-income families eligible for a full medical waiver, they may have cataract surgery performed in HA hospitals.
Haemodialysis Shared Care Programme	- Eligible HA patients with end-stage renal diseases will be invited to participate in the programme. Qualified community haemodialysis providers in the private sector will provide haemodialysis treatment to patients who choose to participate. - Participants simply need to pay the community haemodialysis centre or private hospital a standard fee ($80), the same as that in HA hospitals.
Elderly Vaccination Subsidization Scheme	- Eligible individuals aged 65 and above are provided with a fixed amount of subsidy when they receive vaccination from private doctors enrolled under the scheme. - The enrolled practitioners may charge extra fees for the vaccination, subject to the extra fees being indicated in advance to the Department of Health and on posters in their clinics. In the case of Human Swine Influenza Vaccination, extra subsidies are provided for the injection costs.
Shared Care Programme	- The programme provides additional choices of private services for HA patients. Receiving partial subsidy, the patients can choose private doctors of their choice to follow up on their conditions for comprehensive management. - Doctors who want to charge the patients extra fees will need to make these known in advance to both the Department of Health and the participating patients. - The programme aims to establish long-term patient-doctor relationships in order to promote continuous and holistic care.

Patient Empowerment Programme (PEP)

Starting from March 2010, HA has implemented this programme in collaboration with NGOs to improve knowledge of NCDs and enhance self-management skills among chronic disease patients living in the community (Department of Health, 2017b). A multi-disciplinary team comprising allied health professionals develops appropriate teaching materials and aids for several common NCDs, including hypertension, diabetes, chronic obstructive pulmonary disease and heart disease. Under PEP, training sessions for frontline staff working in the NGOs are provided and patient empowerment sessions are organized. The programme has been implemented in all clusters in 2011. The number of patients involved was 2,000 annually in each HA cluster, while the number of attendances varied across the seven clusters, ranging from 6,500 to 12,000 per year (Ng, 2012). Findings of intervention research show that the PEP can decrease the incidence rate of stroke by 30% (Wong et al., 2015). According to a CADENZA study, the saved medical costs of implementing PEP (net of the cost: HK$100 million in 2016) (Yu et al., 2012). This estimate provides a rationale for implementing city-wide lifestyle intervention programs for chronic disease management. Furthermore, the CADENZA also launched a community project namely Chronic Disease Self-Management Programme (CDSMP), which is discussed in the Box 4.1.

BOX 4.1: CADENZA Community Project: Chronic Disease Self-Management Programme (CDSMP)

A two-year CDSMP steered by The Salvation Army and Shatin Hospital to promote self-management among the ageing population was initiated in 2007, funded by The Hong Kong Jockey Club Charities Trust. The main purposes of this evidence-based project are to facilitate elderly lay leaders as the major force of the Self-management Mobilization Movement and to evaluate an innovative and locally based CDSMP delivery model coping with the changing needs of seniors (CADENZA, 2014). By patient empowerment, participants can learn to manage symptoms brought by chronic disease, thus minimizing the avoidable use of primary health services, and institutionalization.

The CDSMP consisted of 6 sessions, one session per week, with each session lasting for 2.5 hours. Each programme was conducted in groups of 10-12 participants in community elderly centres located in several districts by 2-3 trained professional leaders or elderly lay leaders. The professional leaders were registered social workers, nurses, or allied health professionals, while the elder lay leaders were those retired or older volunteers with chronic diseases. All of them had to complete the CDSMP and a 4-day lay leader training course beforehand. Afterwards, the leaders taught the programmes following a standardised leaders' manual. Each session involved an educational talk, group discussion, action planning and peer group support. The key feature of the programme was to encourage elderly participants to build realistic goals and action plans to achieve their personal goals. They were supported by their peers and leaders through problem-solving and mutual encouragement (Chan et al., 2011).

A non-randomized controlled trial was conducted in the Tai Po and Shatin districts in Hong Kong's New Territories. The evaluation study revealed that the enthusiastic involvement of elder lay leaders has provided older people with a good demonstration of taking more initiative in pursuing a healthy lifestyle rather than solely relying on the medical model. In addition, compared with the control group, the elderly participants showed a significant improvement in self-management behaviours (physical activity level, cognitive symptom management, communication with physician), self-efficacy in managing diseases and symptoms, and health status (fewer social activities limitations and depressive symptoms, and less health distress, and pain and discomfort) (Chan et al., 2011).

General Outpatient Clinics-PPP (GOPC-PPP)

GOPC-PPP was another example of PPP programmes under the chronic disease management project. Piloted in Kwun Tong, Wong Tai Sin and Tuen Mun, the programme aims at (1) providing more choices to patients with limited financial resources for receiving primary care services from private healthcare providers, (2) enhancing their access to primary care services, (3) promoting the family doctor concept, (4) reducing demand for general outpatient services and (5) fostering the development of the territory-wide Electronic Health Record Sharing System (Hospital Authority, 2015).

Clinically stable patients with hypertension and/or diabetes mellitus currently taken care of by GOPCs are invited for voluntary participation (Department of Health, 2017b). The fee and wavier arrangements are same as the HA's services in the public sector ($50 per consultation). Each participating patient will receive up to 10 subsidised visits every year, including consultations for chronic conditions and episodic illness treatment, drugs for treating their chronic conditions and episodic illnesses from the private doctors at their clinics immediately after each consultation, and HA laboratory and x-ray services upon referral by the participating private doctors (Hospital Authority, 2015).

Elderly Health Care Voucher Scheme

The Pilot Scheme of Elderly Health Care Vouchers was launched on 1 January 2009 for a period of three years to promote primary care service for the elderly (Department of Health, 2017a). Initially, only five vouchers of $50 each were provided to each eligible individual aged 70 and above per year. Currently, the annual amount of the voucher increases to HK$2,000 with an unutilized accumulation amount of HK$4,000. To further alleviate the burden of medical expenses on the elderly, the HKSAR government has lowered the eligibility age from 70 to 65 since 1 July 2017 (Department of Health, 2017a). Through providing a financial incentive for older adults to utilize more primary care services, the voucher scheme attempts to shift the demand for public healthcare service to the private sector, and encourage the older population to establish a closer relationship with private family doctors. Apart from medical professionals, a range of registered primary care professionals can participate in the voucher scheme, including Chinese medicine practitioners, dentists, registered nurses and enrolled nurses, physiotherapists and occupational therapists.

However, the effectiveness of the voucher scheme remains in question. Local evaluation studies conducted by the Chinese University of Hong Kong (CUHK) (Yam, Liu, Huang, Yeoh, & Griffiths, 2011) and the Hong Kong Medical Association (HKMA) (The Hong Kong Medical Association, 2015) reveal that the voucher scheme has been ineffective in achieving its primary objective – to promote continuous doctor-patient relationships and preventive care. The underlying reasons include (1) insufficient subsidy amount, (2) low enrolment rate among primary healthcare professionals (mainly due to the cost of establishing the electronic platform), (3) uneven geographic distribution of enrolled healthcare providers (private healthcare facilities tend to be concentrated in wealthier areas), (4) acute and episodic conditions as the major use of the vouchers (Yeoh, 2017). HKMA suggests that public education is needed. Increasing the accumulation limit to HK$6,000 is also recommended. In addition, the Chronic Disease Management Voucher Scheme is proposed to align the health service delivery with the primary objectives of the voucher scheme (see Box 4.2).

Box 4.2 Chronic Disease Management Voucher Scheme

In view of the limited use of elderly healthcare vouchers in chronic condition management and lack of coordination between healthcare services, the Our Hong Kong Foundation report: "An Investment for the Celebration of Aging" proposed a Chronic Disease Management Voucher Scheme (Yeoh, 2017). Unlike the Elderly Health Care Voucher Scheme, this proposed scheme specifically targets chronic diseases and provides management programmes to prevent disease progression and health deterioration. Initially, those living below the poverty line with hypertension and/or diabetes would be subsidized for screening. After being validated by substantial research, the scheme could expand the coverage for a variety of chronic diseases. Similar to other PPPs, the proposed Chronic Disease Management Voucher Scheme would enable both public-private and primary-specialist care collaboration.

CUHK Jockey Club School of Public Health and Primary Care projected the cost of the proposed Chronic Disease Management Voucher Scheme over the next 50 years. The estimated screening cost was found to be much lower than treatment cost, suggesting the potential cost-effectiveness of the voucher scheme.

4.1.3 End of Life Care

In view of the growing burden of terminal illnesses including cancer and non-cancerous conditions and demand for end-of-life care services in the community, the Hong Kong Jockey Club Charities Trust approved HK$131 million to launch a three-year Jockey Club End-of-Life Community Care Project (JCECC) in 2015 (Faculty of Social Sciences, 2015). The project is an initiative aimed at improving the quality of end-of-life care, enhancing the capacity of service providers, and raising public awareness. One of the partners of JCECC, the CUHK Jockey Club Institute of Ageing, launched the Capacity Building and Education Programmes on End-of-life Care. The programme aims at empowering healthcare staff in identifying patients in need and encouraging communication between patients, family members and healthcare professionals, and to promote advance directive. Additionally, it helps build capacity for the community, patients as well as their relatives and caregivers, on quality end-of-life care. Finally it advocates the implementation of a quality end-of-life care model and set of practices in hospital settings (CUHK Jockey Club Institute of Ageing, 2015).

Since October 2016, the Institute of Ageing has conducted 74 seminars and workshops. A total of 120 training hours and over 2,500 participants were recorded. Training was provided in different organizations including 7 hospitals in New Territories East Cluster, namely the Alice Ho Miu Ling Nethersole Hospital, the Bradbury Hospice, the Cheshire Home, the North District Hospital, the Prince of Wales Hospital, the Shatin Hospital and the Tai Po; Care & Attention Homes; the Jockey Club CADENZA Hub and the Hong Kong Stoma Association. Participants in the workshops included patients and their family members, volunteers as well as healthcare workers including doctors, nurses, physiotherapists, occupational therapists, social workers and patient care workers. By conducting a questionnaire survey, it was found that their competence in delivering end-of-life care varied across different subgroups (see Box 4.3).

Box 4.3 Self-Competence Death Work Scale (SC-DWS)

In order to assess the capacity of healthcare staff in providing high-quality end-of-life care, the 16-item SC-DWS was developed and validated to quantify the self-competence level of those conducting work with the dying (Chan, Tin, & Wong, 2015). Respondents were asked to rate compatibility between their own current attitudes and situations in real life for each item, on a scale of 1 (completely incompatible) to 5 (completely compatible). The scale can be used to quantify two key contents of self-competence in death work: (1) existential coping (e.g. answering questions regarding meaning in life and suffering); (2) emotional coping (e.g. relieving intense distress and grief).

In 2016, CUHK Jockey Club Institute of Ageing conducted a survey of doctors, nurses and allied health professionals, personal care workers, social workers and other helping professionals working in five hospitals, a nursing home, a hospice, and a residential care home for the elderly in Hong Kong (Cheung et al., 2017). Preliminary results showed that those aged 50 or above, divorced, working in a hospice, and with bereavement experience had a higher score in SC-DWS. At the same time, nurses and social workers showed a lower self-competence level than personal care assistants. These findings call for a need for evidence-based training sessions for enhancing the capacity of healthcare professionals.

4.2. Integrated care delivery

The health care system of Hong Kong is highly compartmentalized. The lack of coordination and cohesion between primary and inpatient care, acute and community medicine, and the private and public sectors often results in (1) duplication of services; (2) discontinuity of healthcare; and (3) confused patients (Healthcare Planning and Development Office, 2016). This lack of integration in the health sector can adversely affect patients' health and quality of life, and unnecessarily increases the cost of health services. In order to address this fragmentation, integration between medical and social health services has been advocated. Two initiatives in strengthening vertical coordination between healthcare providers at different levels are described in this section.

Integrated Care and Discharge Support for Elderly Patients (ICDS) program

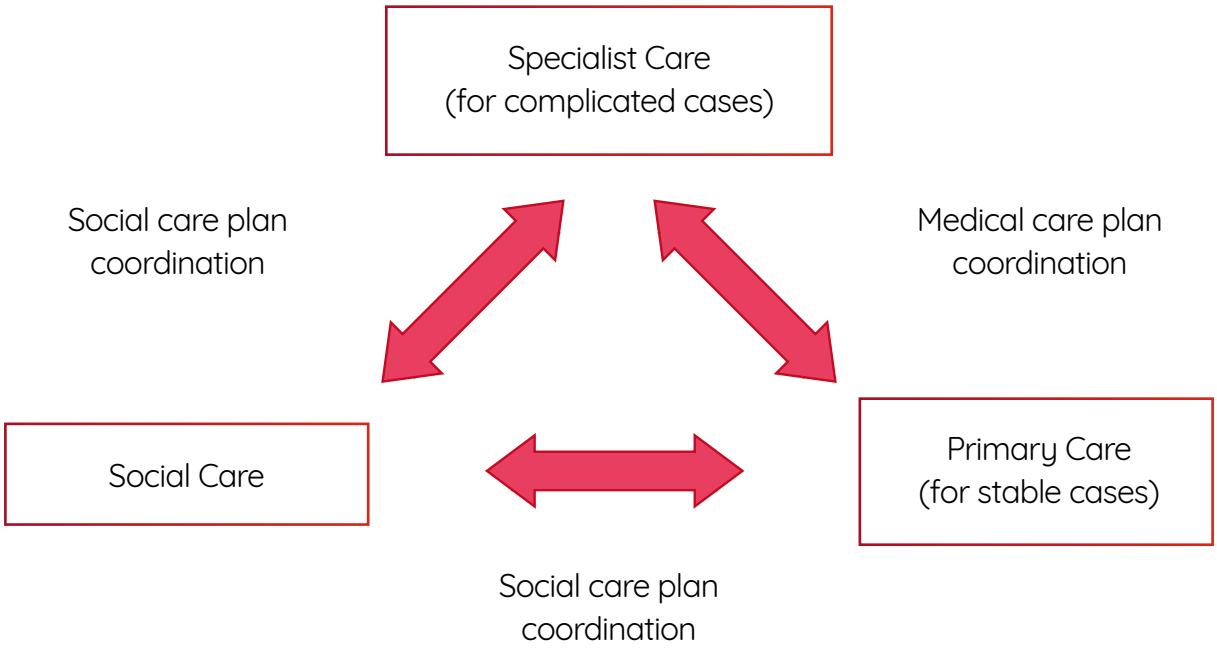
The first example is the ICDS program, which establishes a vertical coordination between HA and NGOs. The primary objective is to ensure patients who are discharged from inpatient units will receive necessary medical and social care once they re-enter the community. Through better discharge planning and post-discharge support, the risk of attending Accident & Emergency Departments, and hospital readmission, could be reduced. Practically speaking, older adults being admitted to hospital will be first screened for their likelihood of hospital readmission upon discharge by a High Admission Risk Reduction Program for Elderly (HARRPE) score. Those with scores over 0.2 upon admission or with clinical recommendations will be referred to the ICDS programme for comprehensive risk assessment and discharge planning. Once discharged, services for the older adults will be coordinated by case managers in the community. These services will include respite and outpatient services, case management for specific diseases, and community nurse services and Home Support Services provided by HA and partnering NGOs.

An evaluation study has provided evidence for the effectiveness of the ICDS programme by assessing hospital utilization 6 months before and after the program (Lin, Luk, Chan, Mok, & Chan, 2015). Within the intervention group, 7.8% of patients died and only 2.4% older patients required institutionalisation in residential care homes. Within 6 months of the ICDS service, there was a 40% reduction in Accident & Emergency Department attendance, a 47% reduction in acute hospital admission and a 31% reduction in hospital bed days (including both acute and convalescence) among participants, compared with 6 months before the ICDS program (Chan, 2015). The functional outcome and health-related quality of life of participants of the program also improved.

Dementia Support Services for the Elderly

The second example of integration between medical and community health services targets older adults with cognitive impairment. The Expert Group on Dementia was set up in December 2013 to review the existing dementia support services and make recommendations on the enhancement of the service. A medical-social collaboration model (Figure 4.1) illustrates how different care levels are derived, and how strategies and care setting for patients at different stages of dementia are formulated (Legislative Council Panel on Health Services, 2017). Effective collaboration between different disciplines could reduce service gaps and avoid duplication of resources between various professions, as well as necessitate the required medical support.

Figure 4.1 Medical-social collaboration model



With reference to the above model, a two-year pilot scheme named "Dementia Community Support Scheme" was launched in February 2017 in Kwun Tong, Sha Tin and Tseung Kwan O (Legislative Council Panel on Health Services, 2017). Run by the government, HA and SWD, the pilot scheme aims at providing support services to the elderly with mild or moderate dementia at the community level through a medical-social collaboration. It involves the participation of 20 subvented District Elderly Community Centres. Older adults aged 60 and above who suffer from mild or moderate dementia will be provided with support services. Healthcare professionals such as nurses, occupational therapists/ physiotherapists as well as social welfare staff will provide support to elderly persons with dementia at the participating community centres. Moreover, carers will be provided with knowledge of care, stress management training, counselling services and other support. The scheme is expected to benefit about 2 000 elderly persons and their carers in the community in the first phrase.

Apart from the medical-social collaboration model of the pilot scheme for mild or moderate dementia cases, the Dementia Expert Group attaches importance to continuous support and services to the elderly with dementia. A coordinated cross-sectoral and multi-disciplinary approach is adopted. Individuals with multiple needs at different stages of dementia would receive the appropriate level of care. The ultimate goal is to slow down the progression of cognitive impairment.

4.3 Ageing in place

Ageing in Place' refers to empowering older adults to live in their own homes or familiar community as long as possible, without moving to another living environment, until their health deteriorates to the level where residential care services are required (Hong Kong Housing Society, 2017a). Aging in place enables older adults to preserve their own health and quality of life. In Hong Kong, older adults have a high preference for ageing in place (Lum et al., 2016), associated with a supportive neighbourhood with medical and social facilities. If support is not readily available in their neighbourhood (Nan Sook et al., 2009), they may encounter difficulties in commuting for services and have to give up community living in order to be in closer proximity to the necessary care (Gaugler, Duval, Anderson, & Kane, 2007).

4.3.1 Home Care

Launched in 2000 and 2003, Enhanced Home Care Teams (EHCS) and Integrated Home Care Services Teams (IHCSTs) are respectively designed to meet the nursing and care needs of frail older adults so that they can age at home in a familiar environment (Chui, 2008). The service package includes care management, nursing care, personal care, rehabilitation exercise, nursing care, counselling services, 24- hour emergency service, day respite services and other home services. Services are provided for older adults with no or mild level of impairments who are not included as part of government-subsidized long-term care services. Services for the healthier group aim at offering older adults a venue to socialize and participate in community activities. Currently, the District Elderly Community Centres and Neighbourhood Elderly Centres are venues for healthy older adults to continue their social lives. More importantly, these centres can serve as a channel of health promotion, through delivering seminars on ageing and healthcare. An annual membership fee is applied at an affordable rate whereas meal services are charged additionally. These in-home services enable the community-living older adults to prolong or even retain their domestic way of life, in a place that they are familiar with and prefer. In 2016, a total of 60 and 34 IHCS and EHCS teams respectively, are serving 7,056 older adults in Hong Kong (Social Welfare Department, 2016).

For moderate to severe level of impairment, Day Care Centres/ Units for the Elderly (DEs/DCUs) are built to provide a range of centre-based daytime care and support services to frail and demented older adults. These services enable them to maintain an optimal level of functioning, develop their potential, and improve their quality of life so that they can continue their lives at their homes (Social Welfare Department, 2005a). For carers, DEs/DCUs also provide various kinds of support and assistance to them and empower them in continuing to fulfill their responsibilities. Service users can approach respective Integrated Service Centres, Medical Social Service Units, District Elderly Community Centres, Neighbourhood Elderly Centres and Social Centres for the Elderly or rehabilitation services units for referrals or DEs/DCUs directly for applications.

4.3.2 Ageing at home

Aside from healthcare implications, ageing in place is accepted as a fundamental concept in new housing design. Creating age-friendly homes and environments will allow the elderly to enjoy their lives with autonomy and dignity, contributing to the progress of healthy ageing. To minimize the potential risk of injuries or accidents, the Buildings Department of HKSAR government issued a Design Manual: Barrier Free Access 2008 (Building Department, 2008), in which it recommends that design guidelines should take into account the common habitual actions as well as the declining abilities of many frail older adults (see Table 4.2). The manual aims to provide design recommendations for building a more comfortable, healthy and age-friendly environment for older adults. Similarly, the Hong Kong Housing Society published the Universal Design Guidebook for Residential Development in Hong Kong, introducing guidelines on the following areas: (1) planning and spatial standards; (2) barrier-free access; (3) home safety; (4) renovation and conversion; (5) environmental factors influencing quality of life (Hong Kong Housing Society, 2014). It targets various older adults with age-, disability- or illness-related problems (Chui, 2008). With elderly-friendly interior designs and community facilities, the older adults are more able to prolong their independent home life in the community.

Table 4.2 Design guidelines for the elderly and elderly with frailty

Common Habitual Actions of the Elderly	Recommended Design Guidelines
The elderly may be unstable in their gait and unable to recognise changes in the level of floor surfaces.	- Barrier-free access should be without steps, thresholds, small ramps or kerbs, wherever possible. Where changes in level are unavoidable, handrails or grab bars should be provided. Steps and staircases should be designed with wider treads and lower risers. - Slip-resistant floor finishes should be used; shiny and reflective floors such as marble and glazed tiles should be avoided. - Escalators should be designed with slower speed. - Open jointed pavers or aeration paver blocks with uneven or very rough surface should be avoided in external open spaces.
The elderly would have decreased stamina	- Resting places such as fold-down seats on stair landings or in long corridors should be provided. - Resting places in external recreation spaces should be adequately provided.
The elderly may fall due to bending, stooping and stretching.	- Switches and controls should be installed at reachable heights preferably at the same level as door handles. Handrails to corridors, steps and staircases should be lowered. - Cupboards should not be installed at high levels. Overhead cabinets should be avoided. Outdoor drying rack systems with laundry poles should be avoided.
The elderly may be weak in gripping and may have difficulties in turning and manipulating taps, switches, door handles and the like.	- Handrails should be of materials such as timber or plastic-coated surfaces for easier grip. Lever-type controls and handles with limited grip should be used. - Knob handles, push operated and self-closing type faucet controls should be avoided
The elderly require comfortable and healthy built environment.	- Sound-absorbing materials should be used for floors and walls to avoid echoes. Non-glare or low gloss finishes on floors, matt paint or textured wallpaper on walls should be considered to help reduce glare. Glass or reflective material should be avoided. - Cross ventilation should be maintained in common areas such as corridors and lift lobbies. - Recreational facilities such as shelters and benches, pavilions and tai-chi areas with safety flooring system should be built in open areas.

Source: Building Department (2008)

Financially supported by the government, the Hong Kong Housing Society launched two 'Senior Citizen Residence Scheme' (SEN) projects, namely Cheerful Court and Jolly Place, in 2003. These SEN housing flats are self-contained, incorporating special 'software' and 'hardware' elements to meet the changing needs of frail older adults. The operator makes use of the facilities at the podium of the SEN projects in providing all sorts of 'software' elements including recreational, social and care services for the elderly (Hong Kong Housing Society, 2017b). The SEN units are disposed of under a 'long lease' arrangement. After paying a lump-sum entry fee, the older person can live in the unit free of payment of rental afterwards. Upon termination of the tenancy, a portion of pre-payment will be refunded. This innovative housing idea is tailor-made for meeting specific needs of older adults and provides them security and comfort. To further facilitate 'ageing in place' in non-institutional settings, The Hong Kong Housing Society is committed to providing basic care and optional personal care services, such as, health promotional programs, monthly basic health check-ups, discounted rehabilitation services (occupational therapy and physiotherapy), 24-hour emergency on-call alarms and daily safety calls. The latest average waiting time for elderly one-person applicants was 2.6 years, as compared with 4.6 years for general applicants (Hong Kong Housing Society, 2018).

4.3.3 Ageing at residential care homes for the elderly

Enabling older adults to age in their own homes is the key concept of age-in-place. At the same time, it is necessary to cater for older adults who are increasingly frail and cannot live alone. Instead of nursing homes, residential care homes for the elderly (RCHEs) have been advocated by the HKSAR government. It subsidizes NGOs to run the RCHEs to provide supplementary care and services for increasingly frail older adults, in particular those with cognitive impairment. Referral to nursing homes at an advanced level can be therefore minimized. Moreover, the government facilitates the conversion of 'elderly hostels' (originally designed to enable physically fit older adults to lead independent lives) to 'care and attention homes' that provide a higher level of personal and nursing care for frail older adults (Social Welfare Department, 2017). Thus, the elderly residents need not move from their original 'homes' to nursing homes due to deterioration of physical health conditions or increasing frailty. These policy measures are all positive moves towards enabling institutionalized older adults to remain living in the 'homes' with which they are familiar. For instance, RCHEs run by the Tung Wah Group of Hospitals are committed to providing a quality service in accommodation, personal care and nursing care services to elderly people who have poor health and have limited self-care ability (Tung Wah Group of Hospitals, 2017). Through offering professional services, diversified activities and adequate facilities in a homely environment, the older adults can enjoy a meaningful and dignified life living in RCHEs.

Nevertheless, there is still room for improvement in both the quality and the quantity of the RCHEs. In 2015, there were 31,137 elderly persons on the waiting list for subsidised residential care places (Labour and Welfare Bureau, 2015). The waiting times for places provided by subvented homes and through the Enhanced Bought Place Scheme are 34 months and 7 months respectively. The government plans to provide about 7,000 residential care places for the elderly to relieve the pressure on service demand and shorten the waiting time for the service. In addition, several incidents involving the Cambridge Nursing Home revealed the problem of poor quality of RCHEs in Hong Kong (Labour and Welfare Bureau, 2015). In view of public concern over the quality of RCHEs, the Residential Care Homes (Elderly Persons) Ordinance provides control and monitoring through a licensing scheme. Besides, the Social and Welfare Department has taken a number of service improvement measures to further upgrade the service quality of RCHEs. These initiatives include (1) strengthening inspection strategy and inspection back-up; (2) dedicated handling and follow-up of complaints; (3) reviewing the legislation and codes of practice and formulating care-related guidelines; (4) enhancing monitoring and quality/skills of home operators/managers/staff; and (5) stepping up law enforcement and increasing transparency (Joint Subcommittee on Long-term Care Policy, 2017).

Chapter 5

Way-forward: The future of Hong Kong as an age-friendly city

5.1 Multi-sectorial effort in addressing multiple health needs in older adults

In this report, we have discussed major health issues in older adults as well as initiatives in improving health status. On the one hand, the current healthcare system in Hong Kong is promoting chronic disease prevention and management in primary care. On the other hand, geriatric syndromes including functional impairment and frailty are still seldom managed and prevented in the medical and community sectors. These syndromes can contribute to poorer quality of life and more healthcare service use. In addition, older adults have multiple and inter-related needs, which may include physical, psychological and social aspects. Instead of relying on specific geriatric services, a multi-disciplinary approach is necessary for maintaining well-being and achieving healthy ageing in Hong Kong. This requires coordination between health policy bodies (Food and Health Bureau and Department of Health), hospital service providers (Hospital Authority), primary care providers, social sector (Social Welfare Department) and community partners (non-governmental organizations).

5.2 Becoming an age-friendly city for healthy and active ageing

An age-friendly city requires an inclusive and accessible community environment that optimizes opportunities for health, participation and security for all people including older adults. "Community support and health services" is one of the eight key domains of urban environment that support active and healthy ageing. The participation of different stakeholders is needed to create such an environment. For example, the Hong Kong Jockey Club is implementing a series of age-enabling interventions with four local universities in Hong Kong in the Jockey Club Age-friendly City Project, including the AgeWatch Index for Hong Kong for monitoring progress. At the same time, the Hong Kong government should play a leadership role in creating an age-friendly policy framework and in coordinating the activities of a variety of stakeholders (HKSAR Government, 2016). With joint efforts of the government, district councils, universities, non-governmental organizations and older adults, an integrated approach to building up age-friendly Hong Kong is plausible.

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ISBN 978-988-13333-4-6