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International Spotlight

The Aging of a Young Nation: Population Aging in Singapore

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Abstract

The juxtaposition of a young city-state showing relative maturity as a rapidly aging society suffuses the population aging narrative in Singapore and places the “little red dot” on the spotlight of international aging. We first describe population aging in Singapore, including the characteristic events that shaped this demographic transition. We then detail the health care and socioeconomic ramifications of the rapid and significant shift to an aging society, followed by an overview of the main aging research areas in Singapore, including selected population-based data sets and the main thrust of leading aging research centers/institutes. After presenting established aging policies and programs, we also discuss current and emerging policy issues surrounding population aging in Singapore. We aim to contribute to the international aging literature by describing Singapore’s position and extensive experience in managing the challenges and maximizing the potential of an aging population. We hope that similar graying populations in the region will find the material as a rich source of information and learning opportunities. Ultimately, we aspire to encourage transformative collaborations—locally, regionally, and internationally—and provide valuable insights for policy and practice.

Keywords: Successful aging, Public policy, Health care policy, International spotlight, Asian and Pacific Rim older adults

In 2017, 19.7% of Singapore’s total population consisted of persons aged at least 60 years ([Department of Statistics, 2017c](#)). This proportion will have reached 40%

by year 2050 ([United Nations, 2017a, 2017b](#)). This accelerated pace of population aging raises significant interest in aging research and policy not only for Singapore, but

also for similar aging populations in the region (Knodel & Teerawichitchainan, 2017; Tey et al., 2016). In view of international aging (Pruchno, 2017), we describe Singapore's experiences as a young nation facing the challenges of rapid population aging.

Country Profile and Aging Demographics

Singapore is a 720-km² city-state in Southeast Asia, south of Peninsular Malaysia (Kennard, Ho, Winstedt, & Leinbach, 2018). In 2017, 70.6% of its 5.6 million total population were Singapore citizens and permanent residents (hereafter, residents), which consisted of three ethnic groups: the Chinese (74.3%), Malays (13.4%), and Indians (9.0%). The remaining 1.6 million nonresidents included foreigners who work, study, or live in Singapore with valid passes and permits (Department of Statistics, 2017a). The proportion of residents with at least university-level qualifications was 29% in 2016 compared to 3% in 1980; unemployment rate was 2.2% in 2017 (Department of Statistics, 2017a; Kong, Goh, Birger, & Tan, 2008; Ministry of Manpower, 2017b).

Singapore's population is rapidly aging. Its median age increased from 34 years in year 2000 to 40 years in 2015 (United Nations, 2017b). Moreover, the proportion of residents aged at least 65 years grew from 7% in 2000 to 13% in 2017 (Department of Statistics, 2017a). Compared to 2006 data, life expectancy at birth (80.3 years) and at age 65 (18.9 years) improved to 82.9 and 20.8 years, respectively in 2016, whereas total fertility rate (TFR) remained below-replacement level at 1.2 births per female (Department of Statistics, 2017a). This age structure comes with a declining old-age-support ratio, which leaves fewer working-age residents (20–64 years) supporting a person aged at least 65 years (i.e., 10.5, 7.4, and 5.1 working-age persons per one older person in 1990, 2010, and 2017, respectively; Department of Statistics, 2017a). In 2015, 77% of total deaths in the resident population were among those aged at

least 60 years. Although the absolute number of deaths rose from 14,000 in the 1990s to 21,000 in 2017, the age-standardized death rate among residents declined due to overall health improvements. Given these trends, it is indeed likely that Singapore will rank as the fifth oldest and least fertile country worldwide by 2050 (United Nations, 2015) with a median age of 53 years and a TFR of 1.4 (Table 1).

Population Health and Older Persons

Increased longevity and population aging largely portray a success story for medicine and public health (Schoeni & Ofstedal, 2010). However, demographic shifts in aging populations coincide with changes in mortality and morbidity patterns (McKeown, 2009); this associated epidemiologic transition is evident in Singapore where the majority of the leading causes of premature mortality and disability-adjusted life years in 2010 were chronic/noncommunicable diseases (NCDs). Altogether, NCDs contributed to 64% of total years of life lost in 2010 (vs 60% in 1990) (Health Metrics and Evaluation, 2010); the top three causes of death in 2015 were cancer (30%), pneumonia (19%), and ischemic heart disease (17%; Ministry of Health, 2018d). Table 2 shows the age-specific prevalence of key NCDs and their risk factors in subgroups of older Singaporeans (Ministry of Health, 2004, 2010).

Health Services and Health Care Financing

Multiple chronic conditions are prevalent in older persons especially among those aged at least 85 years (Salive, 2013). In Singapore, the growing number of older persons who are also likely to have multiple NCDs has intensified health care utilization and created challenges in meeting demands for health care services. In a 2011 survey of senior citizens, 8.4% of older persons reported having had at least one episode of hospitalization in the past year, the incidence of which increased with age (Kang, Tan, & Yap,

Table 1. Selected Demographic Characteristics and Population Projections in Singapore

Characteristics	1990 [†]	2017 [†]	2030 [‡]	2050 [‡]
Total population size	3,047,100	5,612,300	6,418,000	6,681,000
Median age (years)	29.8	40.5	47.0	53.0
Total fertility rate per female	1.80	1.20 [§]	1.31	1.40
Life expectancy at birth (years)	75.3	82.9 [§]	85.4	88.3
Life expectancy at age 65 (years)	15.7	20.8 [§]	No data	No data
Healthy life expectancy at birth, males (years)	65.3	75.0	No data	No data
Healthy life expectancy at birth, females (years)	68.5	78.0	No data	No data
Resident old-age support ratio [¶]	10.5	5.1	2.5	No data
Resident population aged >60 years (%)	9.4	19.7	30.7	40.4
Total deaths	13,891	20,905	No data	No data
Age-standardized death rate (per thousand residents)	4.7	3.0	No data	No data

[†]Department of Statistics, Republic of Singapore, 2017. [‡]United Nations, Department of Economic Social Affairs, Population Division, 2013, 2015. [§]Reported 2016 data. ^{||}Reported 2013 data. [¶]Persons aged 20–64 years per person aged ≥65 years.

Table 2. Prevalence of Chronic Diseases and Selected Risk Factors in Subgroups of Older Singaporeans[†]

National Health Survey, 2004 and 2010 [‡]			Other studies on older Singaporeans, 2012–2017	
Chronic disease/risk factor	Prevalence (%)		Chronic disease/risk factor	Prevalence (%)
	2004	2010		
Diabetes mellitus	28.7	29.1	Frailty/pre-frailty [¶]	4.5/40.6
Hypercholesterolemia	26.7	23.3	Frailty/pre-frailty [¶]	6.2/37.0
Hypertension	56.1	53.4	Symptomatic knee osteoarthritis [#]	11.0
Chronic kidney disease [§]	—	6.8	Cognitive impairment ^{††}	25.5
Daily smoking	9.6	11.4	Dementia ^{††}	10.0
Insufficient physical activity	35.8	40.0	Glaucoma ^{††}	4.0
Obesity	7.6	7.2	Depression ^{§§}	3.7
Regular alcohol consumption	3.9	3.6	Limitations in activities of daily living ^{¶¶}	9.1

[†]Data pertain to the corresponding subgroups of older Singaporeans. [‡]Persons aged 60–69 years (Ministry of Health, 2004, 2010). [§]Persons aged 55–69 years (Ministry of Health, 2004, 2010). [¶]Community-dwelling individuals aged ≥55 years (Wei, Nyunt, Gao, Wee, & Ng, 2017). [#]Community-dwelling individuals aged ≥65 years (Merchant et al., 2017). ^{¶¶}Patients aged ≥50 years (Leung et al., 2018). ^{††}Resident population aged ≥60 years (Subramaniam et al., 2015); dementia assessment based on 10/66 protocol. ^{§§}Community-dwelling individuals of Chinese ethnicity aged ≥40 years, mean age of 60 years (Baskaran et al., 2015). ^{§§}Resident population aged ≥60 years (Subramaniam et al., 2016); depression assessment based on Geriatric Mental State. ^{¶¶}Community-dwelling individuals aged ≥60 years (Malhotra, Chan, Malhotra, & Ostbye, 2012).

2013). A hospital-based study also found that patients with at least three inpatient admissions per year were usually older and had cerebrovascular diseases and malignancies (Low et al., 2018).

In 2014, Singapore faced a hospital bed crunch as bed occupancy rates rose to 87.2%; this episode had been partly attributed to increasing acute hospital admissions among those aged at least 65 years over the last decade (i.e., 24.7% in 2006; 30.7% in 2016; Singapore Parliament, 2014). Following accidents and injury (8%), cancer (6%), pneumonia (3%), and ischemic heart diseases (3%) were the leading causes of hospitalization in the general population (Ministry of Health, 2017b). However, older patients were also more likely to have prolonged length of hospital stay (≥21 days) due to other factors (e.g., financial difficulties, caregiver stress; Zhou, Vidyarthi, Wong, & Matchar, 2017). In 2017, 11.3% of admissions to psychiatric hospitals were among persons aged at least 65 years compared to 10.4% in 2015; corresponding proportions in community hospitals remained at 81% from 2015 to 2017 (Ministry of Health, 2018b).

Intermediate and long-term care (LTC) facilities, including stepdown care services, are also available for older Singaporeans. Stepdown care services include residential or community-based health care services (e.g., community hospitals, nursing homes), which attend to patients who require non-acute care services (e.g., rehabilitation or convalescent care), but typically remain or get admitted in acute care hospitals (Ooi, Foo, Vasu, & Seow, 2012). Over the last 3 years, utilization of residential LTC (e.g., nursing home), center-based care (e.g., dementia day care), nursing and medical home care, and home palliative care has increased (Ministry of Health, 2018b). Although private, for-profit providers deliver some LTC services, voluntary welfare organizations (VWOs) play the major part in

delivering LTC services and training providers in caregiving (Chin & Phua, 2016). VWOs also run community-based hospice care services under the auspices of the Singapore Hospice Council, which oversees sectors that provide palliative care services (Singapore Hospice Council, 2018).

In 2015, Singapore spent 12.9% of its total expenditure on health (Singapore Government, 2015); however, 39% of its health expenditure was out-of-pocket (OOP) spending (World Bank, 2015). Anchored on the philosophies of individual/familial responsibility and affordable health care for all, Singapore adopts a mixed public–private financing system involving market-based mechanisms and individual compulsory savings. Aside from government subsidies, residents can use their compulsory medical savings account (*Medisave*) to cover hospitalization, day surgery, and other outpatient costs for the individual or an immediate family member. Moreover, residents have a lifetime coverage for large hospitalization costs and approved costly outpatient treatments (e.g., dialysis, chemotherapy) through a basic universal health insurance (*MediShield Life*); its premium is paid through the individual's or an immediate family member's *Medisave* account (Ministry of Health, 2017a).

Recent changes to the *Medisave* assist younger residents to save for subsidized health care in old age (Central Provident Fund, 2016c). The *Flexi-Medisave* now covers up to 200 Singapore dollars (SGD) of outpatient expenses in specialist outpatient clinics and polyclinics, as well as in private general practitioner (GP) clinics registered in the *Community Health Assist Scheme* (CHAS) for low-income patients (≥60 years; Ministry of Health, 2018c). Before these changes, older Singaporeans (70%) reported OOP spending and receipt of financial support from their children (40%) for GP consultations. Hospitalization OOP spending was lower (29%) as some older persons pay their hospitalization fees through *Medisave* (Kang et al., 2013).

In 2015, LTC expenditure on older Singaporeans came from OOP (40%) and government spending (42%), charitable donations (9%), and private LTC insurance (9%; [Graham & Bilger, 2017](#)).

Socioeconomic Aspects of Aging

The latest data on marital status showed that 68% of residents aged at least 60 years are married, 20% widowed, 4% divorced/separated (4%), whereas 8% are single ([Department of Statistics, 2017b](#)). Although the majority of those aged at least 65 years live with a spouse (58%), 20% of them live alone ([Department of Statistics, 2017d](#)). Emphasis on family support in aging policies ([Mehta, 2006](#)) has persisted over the years. In 2011, 67% older Singaporeans (≥ 55 years) cited income transfers from children as their major income source ([Kang et al., 2013](#)). More recently, allowances from children or spouse remained as the main source of financial support for 57% of residents aged at least 65 years, followed by income from paid work (20%) and personal savings (10%; [Department of Statistics, 2015](#)).

Nevertheless, the *Central Provident Fund* (CPF) remains the centerpiece of Singapore's social security system. Although most working resident adults and retirees have a CPF account, older residents need to maintain a minimum sum through which they can participate in an annuity scheme after retirement ([Kang et al., 2013](#)). As a mandatory employment-based savings, CPF members automatically contribute a portion of their total wages to their account throughout their active years of employment ([Graham & Bilger, 2017](#)). However, their CPF account is not exclusive for retirement as it also serves to meet the housing and health care needs (e.g., *Medisave*) of its members; it is likely that older members will have used a substantial sum of their savings even before their retirement ([Kang et al., 2013](#)). Older persons, especially women, who had never engaged in employment (or had only worked a few number of years) to raise a family or take on a caregiving role, are also particularly vulnerable because they would not have had income from paid work and the employer's share in CPF contributions.

In 2017, labor force participation among residents aged 55–64 and at least 65 years were 70% and 27%, respectively ([Ministry of Manpower, 2017a](#)). Although the minimum retirement age in Singapore is 62 years, employers are required to offer reemployment to eligible workers who turn 62 years so they can continue working up to the age of 67 ([Singapore Government, 2012](#)). Although many older Singaporeans return to work or continue working due to financial needs (55%), having an older-worker-friendly work environment also influences their motivation to rejoin the workforce ([Kang et al., 2013](#)).

In the absence of an official poverty line in Singapore, researchers and policymakers draw on alternative measures of poverty, such as the monthly per capita household

income (i.e., income from paid work among relatives living in the same address; [Graham & Bilger, 2017](#)). Informal poverty indices and estimates of related aspects of poverty (e.g., social protection, expenditure on essential needs), nonetheless, help identify vulnerable groups, such as older adults, and define their eligibility for health and social care services ([Smith, Donaldson, Mudaliar, Kadir, & Keong, 2015](#)).

Aging Research

Although we found extensive research on the biology of aging in Singapore, our narrative focuses on studies in the realms of clinical, medical, and social sciences. Thus, we continue with a summary of aging research ([Supplementary Materials](#)), organized into five key themes: sociocultural and economic aspects of aging; health, well-being, and quality of life; caregivers of older Singaporeans; successful and active aging; and health care services and LTC. We also present key data sets to provide a broad sense of the extent and depth of aging research in Singapore ([Supplementary Table 1](#)). Although, population-based studies are at the core of aging research, further research requires sustaining large-scale panel data on older Singaporeans. The availability of potential funding also provides an impetus for the aging research community and highlights the role of research in informing policy and practice. The [National Research Foundation \(2018\)](#) and other funding agencies specify aging-related themes (e.g., healthy aging) in their research thrust. The steady presence of aging research centers/institutes ([Table 3](#)) allows Singapore to keep abreast with and contribute to the latest developments in the field.

Policy Response to Population Aging

In general, Singapore's core aging policies encourage aging in place and provide support for residents to age well in their communities. The 2015 *Action Plan for Successful Ageing* presented key initiatives to support Singaporeans in aging confidently and leading active lives ([Ministry of Health, 2016a](#)). Although stakeholders from government, VWOs, academia, business, and community were major contributors in developing the action plan, other agencies also play a central role in supporting social and health care services for older persons ([Table 4](#)). We now discuss three core policy themes ([Figure 1](#)) from the established aging policy initiatives in Singapore.

Preventing and Managing Chronic Diseases

Singapore has a nationwide *Wellness Program*, which taps on a network of community facilities and partners to deliver health services, promote health education, and offer social and physical activities. Another overarching initiative, *Active Ageing*, employs a multipronged approach to support social and economic participation of older persons

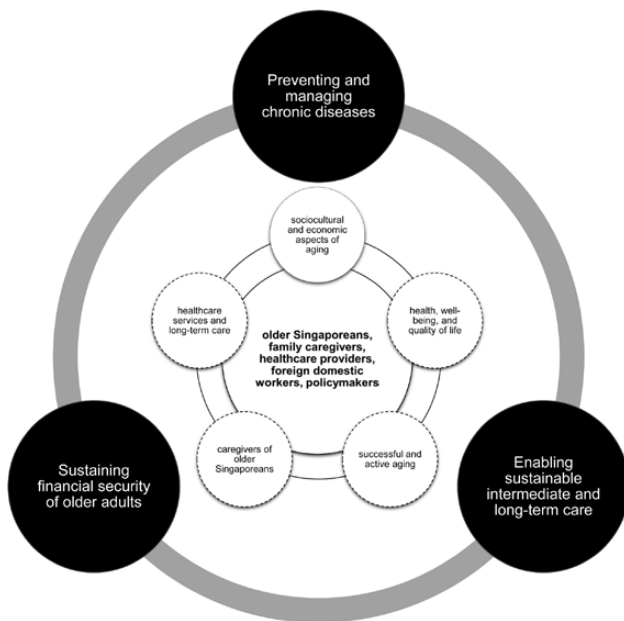
Table 3. Key Aging Research Centers/Institutes in Singapore

Center/institute	Research thrust	Website
Ageing Research Institute for Society and Education (ARISE)	Operates as a coordinating body that brings together strong multidisciplinary research and development capabilities across the colleges/schools/centers in Nanyang Technological University. Its mission is to enable and empower individuals to age healthy and actively. ARISE aims to foster meaningful social integration and productivity via advanced and innovative technological solutions with a deep understanding of aging-related psychosocial issues for effective translation into practice to impact the lives of the older persons	http://arise.ntu.edu.sg/Pages/Home.aspx
Centre for Ageing Research and Education (CARE)	An academic research center at Duke-NUS Medical School that aims to maximize interdisciplinary expertise on population aging in Singapore and the region through collaborations across medical, social, psychological, economics, and environmental disciplines. CARE organizes educational programs for capacity building among researchers, and policy and program professionals. It actively engages with government and industry partners to meet the needs of population aging	https://www.duke-nus.edu.sg/care/
Institute of Geriatrics and Active Aging—Tan Tock Seng Hospital	A research and education institute that harnesses the unique interprofessional and multidisciplinary capabilities across the clinical departments of the Division of Integrative and Community Care, Tan Tock Seng Hospital. Through the three-pronged approach of research, innovation, and education, it aims to enable the delivery of holistic, person-centric care to ultimately improve the health, independence, safety, and quality of life of older persons. The research areas of focus include aging well, frailty/sarcopenia, aging brain, and health professions education	http://ttsh-iga.com/
Centre for Research on the Economics of Ageing (CREA)	An academic research center operating out of Singapore Management University. Its mission is to carry out a program of academic research on economic security among Singapore's aging population. This research is primarily based on the Singapore Life Panel, a monthly panel survey of more than 8,000 Singaporeans aged 50–70 years, which has been operated by CREA since 2015. The principal objectives are to provide a detailed picture of the situation of aging Singaporeans, analyze relationships among key variables affecting financial adequacy, and evaluate existing and potential policy measures designed to improve well-being for the elderly. Research is exploring the impact of employment, health, wealth, housing, and social systems on retirement adequacy and household decision making	https://crea.smu.edu.sg/
Geriatric Education and Research Institute (GERI)	A national institute under the Ministry of Health to lead and coordinate research agendas related to geriatric education, research, and service planning in the health services and clinical aspects of aging. GERI emphasizes research and related education development across the continuum from acute to intermediate, community, and long-term care by engaging in transdisciplinary and translational research that affect health policy and practice	http://www.geri.com.sg/
Lien Centre for Palliative Care (LCPC)	An academic research and education center at Duke-NUS Medical School, LCPC's portfolio includes a mix of local and regional research projects for patients with advanced serious illnesses such as advanced cancer, end-stage heart failure, renal failure, and dementia and their caregivers as well as a series of blended learning courses on palliative care for health care professionals. LCPC's research projects range from surveys and cohort studies to testing interventions and new models of care delivery. Its core areas of research include patient preferences for end-of-life care, end-of-life financing and delivery models, communication at end of life, and pain and symptom management	https://www.duke-nus.edu.sg/lcpc/
LILY: Joint Nanyang Technological University–The University of British Columbia Research Centre of Excellence in Active Living for the Elderly	A research center focused on the use of artificial intelligence technologies to help seniors enjoy an active, independent, and dignified lifestyle. LILY is one of the world's first incubators of interdisciplinary research ideas to promote successful aging and establish Singapore as a hub for developing technology enabled age-friendly communities	http://www.ntulily.org/

Table 4. Government Ministries and Agencies Supporting Social and Health Care Services for Older Singaporeans

Ministry/agency	Role
Ageing Planning Office (APO)	Overseeing the planning and implementation of strategies for addressing the needs of older Singaporeans, supporting the Ministerial Committee on Aging, which drives the City For All Ages project that aims to develop senior-friendly communities
Agency for Integrated Care (AIC)	Integration of community and long-term care services (i.e., health and social services) for older persons
Community Network for Seniors (CNS)	Provision of multi-stakeholder engagement and support of seniors
Ministry of Health (MOH)	Consolidation of the delivery of social and health services to seniors [†]
National Council of Social Service (NCSS)	Provides leadership and direction in capacity development of affiliated social service organizations in Singapore
Silver Generation Office (SGO)	Formerly the Pioneer Generation Office, SGO reaches out to new cohorts of older Singaporeans (≥65 years) beyond the pioneer generation [‡]

[†]In early 2018, delivery and administration of relevant health and social services for aged care were combined under the Ministry of Health to enable a comprehensive and holistic planning of community support for seniors. Previously, senior-related social support services were managed by the Ministry of Social and Family Development (Lai, 2018). [‡]A “pioneer” is defined as a Singaporean born on or before December 31, 1949, and obtained citizenship before December 31, 1986.

**Figure 1.** Policy themes on aging in Singapore.

(Aw et al., 2017). Singapore’s comprehensive *Chronic Disease Management Program* (Ministry of Health, 2012) taps into the primary care system and specifies a list of chronic diseases for which the Medisave can be used to cover outpatient treatment. The CHAS also enables eligible lower-income older Singaporeans to seek subsidized chronic disease treatment from neighborhood GPs.

Enabling Sustainable Intermediate and LTC

Since 2015, the government has supported intermediate and LTC infrastructures through initiatives to double the number of community-hospital beds, increase nursing home capacity by 70%, and improve home- and community-care placement by 50% and 100%, respectively, in 2020. The government also plans to build 40 daycare

centers for seniors by 2020; 10 of which will serve as large active-aging hubs in public housing estates (Ministry of Health, 2016b). This expansion goes with the requisite guidelines on the quality of intermediate and LTC services (Ministry of Health, 2015) to ensure that quality standards are maintained and improved.

The foundation of LTC financing in Singapore includes a combination of public and private funding sources (e.g., means-tested subsidies, grants). Over the years, the government has expanded efforts to support the health care needs of older persons through the lifelong benefits of the *Pioneer Generation Package* for outpatient care subsidies (i.e., for Singaporeans born before 1949), *Medisave* top-ups for national medical savings, lower premiums for *MediShield Life* insurance, and a financial assistance program for older persons with disabilities. A voluntary LTC insurance (*ElderShield*) and a safety net program for indigent older patients (*Medifund Silver*) are also available. Other financing programs focus on enabling families to employ live-in foreign domestic workers (FDWs) to help care for older family members; if eligible, families pay 80% lower levies in hiring FDWs for this purpose, whereas low- and middle-income families receive an additional S\$120 SGD monthly budget (Graham & Bilger, 2017).

The government’s policies that encourage family caregiving and its preference for home- and community-based services are keys to minimizing LTC cost (Rozario & Rosetti, 2012). As more Singaporeans choose to live independently in their communities in old age, younger Singaporeans can avail of housing subsidies for opting to live near their elderly parents (Ministry of Finance, 2018); new public housing estates will have colocated eldercare and childcare centers (Ministry of Health, 2016b).

Sustaining Financial Security of Older Persons

Besides their primary income sources (e.g., intergenerational transfers, CPF), several forms of financial assistance

are available for older Singaporeans. The *Silver Support Scheme*, for example, supports older Singaporeans who have limited to no family support and are likely to have had low incomes throughout their working lives. This scheme provides an automatic quarterly cash supplement for the bottom 20% of low-income older Singaporeans (Central Provident Fund, 2018). The *Lease Buyback Scheme* gives eligible older Singaporeans the option to monetize a portion of their flat's lease while continuing to live in it; proceeds from the sale can be used to purchase a CPF life plan that provides them with a monthly income for life upon their retirement (Housing & Development Board, 2018). This scheme is the key in retirement financing for older homeowners who have most of their wealth in home equity (Phang, 2018).

Relevant policies also enable work opportunities for older Singaporeans. The *Retirement and Re-Employment Act* mandates supporting older Singaporeans who rejoin the workforce (Singapore Government, 2012). Progressive employment practices support employers in redesigning workplace processes to create an older person-friendly work environment. The *SkillsFuture* initiative subsidizes courses for all residents, including older persons, to upgrade their skills and improve their chances of employment. The *National Silver Academy* initiative expands learning opportunities for eligible seniors through a network of education institutions and community organizations (Council for Third Age, 2018).

Policy recommendations espousing family caregiving are central in supporting financial security of older persons. Given the existing national social security system, older persons are encouraged to first turn to their family for their care needs before accessing government subsidies. Hence, adult children assume responsibility for their parents. Some older parents falter when their children refuse to support them financially. Although the *Maintenance of Parents Act* decrees that adult children support older parents who need financial assistance, parents are often reluctant to take matters to court (Aw et al., 2017).

Implications for Aging Research and Policy

Drawing insights from the foregoing discussion, there is a clear imperative to sustain the iterative process of identifying the changing needs of an aging population, which is the key in translating research into policy and practice. Reinforcing the sustainability of existing policies demands effective implementation and a steady stream of evidence from population-based studies on the needs of older Singaporeans, their families, and formal care providers. These policies also need regular reassessment. For example, following committee reviews of the *ElderShield*, a new national LTC insurance will be launched in 2020 to address indefinite LTC costs in severe disability (Ministry of Health, 2018a).

This *Spotlight* also reveals emerging issues on aging in Singapore. First, the evolving landscape of family caregiving

for older persons will be the key in sustaining government initiatives that support aging in place and limit the cost of LTC. Investigating the dynamics of family caregiving through longitudinal studies of older Singaporeans and their caregivers will provide important insights on the caregiving process that can help develop targeted interventions for older persons and their families. Indeed, family members remain on the frontline of caregiving for older persons, thereby preventing or delaying institutionalization. However, changes in the traditional family structure influence conventional caregiving dynamics, suggesting potential departures from usual caregiving arrangements and greater diversity in family caregivers. For example, when a husband suffers a major illness (e.g., stroke), household income falls and labor force participation shifts to the wife (Cheng, Vaithianathan, & Li, 2018). As female labor force participation increases, some women who routinely take on caregiving roles can then only afford a fraction of the time they previously spent caregiving. The shrinking size of the Singapore nuclear family will also result in fewer adult children caring for the elderly, thereby increasing a person's likelihood of being involved in caregiving (Mehta, 2006).

In addition, further research must consider the needs of care providers (e.g., health care professionals, FDWs) as well as those of older persons and their families to develop a comprehensive approach to aging issues. A related imperative speaks to expanding local education and training in gerontology and geriatrics. Exploring the potential role of technology in addressing health care work force issues (e.g., deficits in geriatric care staff) can drive Singapore's role in developing and maximizing technology for aging populations (Ministry of Finance, 2018). Thus, capacity development in health technology assessment will be increasingly relevant.

Palliative care issues specific to geriatric patients also warrant attention given the need to develop best practice guidelines in palliative care for older patients throughout various stages of illness. Providing quality end-of-life care in aging populations merits as much consideration from stakeholders in research, policy, and practice. The *National Guidelines for Palliative Care* (Standards Development, 2015) and findings from studies on end-of-life care for older persons can guide the next steps forward.

Finally, it is worthwhile exploring the feasibility of conducting comparative aging research studies across Asia to inform, policy, and practice. Doing so will be an important step toward developing standard measures and approaches in the field. Such investigations are warranted across the region given the accelerated rates of population aging in other Asian countries including, Japan, China, Korea, and Taiwan (Pruchno, 2017). Comparing Singapore and Malaysia, for example, can provide relevant insights given their similar multiethnic profile. Likewise, Hong Kong's geographical, economic, and cultural similarities with Singapore can enable meaningful comparisons. For Singapore and Malaysia, both countries recognize the

importance of transcending ethnic differences in intergenerational programs to support population aging (Tey et al., 2016). Nevertheless, the prevailing socioeconomic disparities across ethnic groups in these multiethnic societies (Noor & Leong, 2013) warrant a better understanding of how population aging intersects with relevant multiethnic models as well as other important issues such as poverty and inequality in the aging context. Akin to aging policies in Singapore, Hong Kong has called for implementing age-friendly employment practices and structural social policy changes. This approach will enable a more productive and engaged older adult population amid increasing health care costs, rather than relying on family support alone and the government providing basic safety nets to the neediest individuals (Cheng, Lum, Lam, & Fung, 2013). Ultimately, countries facing the common challenges of population aging can draw practical insights from their shared experiences to perceptively develop and implement appropriate aging policies and effective programs in their respective settings.

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Supplementary Material

Supplementary data are available at *The Gerontologist* online.

Conflict of Interest

The authors have no conflict of interest.

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