

My Proposals to Promote “Healthy Aging,” as Advisor to the Minister of Health in My Country (Dreams of the Asia-Oceania International Association of Gerontology and Geriatrics e-TRaining in Gerontology and GERiatrics Trainees)

Malarkodi Suppamutharwyam^{1,2}, Tami Ishibashi³, Irma Ruslina Defi⁴, Nareshraja Janardanan^{1,5}, Sunku Rajeswari⁶, Jasmine Kaur Sabharwal⁷, Chintrai Thavonlun⁸, Myonghwa Park⁹

¹Department of Geriatric Medicine, Kuala Lumpur General Hospital, Kuala Lumpur, ²School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Scotland, United Kingdom, ³Department of Nursing, Tokyo Women's Medical University, Tokyo, Japan, ⁴Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Padjadjaran University, Hasan Sadikin General Hospital, Bandung, Indonesia, ⁵Department of Medicine, Toowoomba Hospital, Queensland, Australia, ⁶Medical Division, Bhabha Atomic Research Centre, Mumbai, Maharashtra, ⁷Department of Medicine, Dr. B. R. Ambedkar Institute of Medical Sciences, Mohali, Punjab, India, ⁸Golden Jubilee Medical Center, Faculty of Medicine Siriraj Hospital, Mahidol University, Salaya, Thailand, ⁹College of Nursing, Chungnam National University, Daejeon, South Korea

Abstract

The accelerating pace of population aging in Asia poses significant challenges for health care and economies. As life expectancy increases and chronic diseases become more prevalent, understanding and addressing the healthcare needs of older adults is crucial. This review examines the key health issues affecting older adults in Asia, including nutritional status, mobility limitations, frailty, sarcopenia, mental, and cognitive health concerns. The authors conducted a mini-review of research on the health challenges faced by older adults in the region, drawing from a wide range of sources, including indexed and nonindexed journals and databases. The review highlights that aging in Asia is accompanied by a sharp rise in physical and mental health problems. While life expectancy in Asia has increased, many older adults experience declining physical and mental health, burdened by inadequate nutrition, frailty, and sarcopenia. Mental health issues, exacerbated by social isolation and limited access to services, are particularly prevalent in this population. The rapid pace of aging in Asia, coupled with the increased vulnerability of older adults and the lack of comprehensive national aging policies, highlight the region's unpreparedness to address the challenges faced by older adults. This demands urgent actions. To ensure healthy aging, Asia must prioritize a comprehensive national policy that addresses physical and mental health, economic security, productive work, and social engagement. Investing early in the health of older adults, promoting healthy lifestyles, accessible and older adults' friendly infrastructure, and integrated, holistic health care can reap long-term benefits, reducing healthcare burdens and improving quality of life.

Keywords: Cognitive decline, healthy life expectancy, mental health, mobility disorders, nutrition

INTRODUCTION

Recognized for my work in aging populations, I was honored to receive the Asia-Oceania International Association of Gerontology and Geriatrics e-TRaining in Gerontology and GERiatrics (ASIO IAGG e-TRIGGER) award (<https://iagg-fge.org/>). This recognition led to the Health Minister approaching me, requesting a comprehensive review of the geriatric situation in our country compared to neighboring

nations to inform the development of healthy aging initiatives. Hence, my team and I conducted a mini-review of the health

Address for correspondence: Dr. Malarkodi Suppamutharwyam, Honorary Research Fellow, School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Scotland, United Kingdom. E-mail: malar2407@gmail.com

Submitted: 15-Oct-2024 Revised: 30-Oct-2024 Accepted: 30-Oct-2024 Published: 15-Nov-2024

Access this article online

Quick Response Code:



Website:
www.jiag.in

DOI:
10.4103/jiag.jiag_78_24

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Suppamutharwyam M, Ishibashi T, Defi IR, Janardanan N, Rajeswari S, Sabharwal JK, *et al.* My proposals to promote “Healthy aging,” as advisor to the minister of health in my country (Dreams of the Asia-Oceania International Association of Gerontology and Geriatrics e-TRaining in Gerontology and GERiatrics Trainees). *J Indian Acad Geriatr* 2024;20:195-202.

challenges faced by older adults in Asia. Our goal was to identify the most pressing needs of our aging population and develop practical recommendations to guide policymakers in improving the well-being of older adults and promoting healthy aging.

PROCEDURE

We conducted a literature search using indexed and nonindexed journals, databases, and online resources, including Google Scholar, PubMed, Scopus, ScienceDirect, ResearchGate, Cochrane, the World Health Organization (WHO), and Our World in Data, to identify research related to health challenges faced by older adults. This activity initially started as a group project in the ASIO IAGG e-TRIGGER training program, where trainees contributed to the literature reviews on China, India, Indonesia, Japan, Malaysia, and South Korea, representing major Asian nations. The review focused on key health issues affecting older adults, using search terms such as life expectancy, healthy life expectancy (HALE), nutritional status (including obesity, malnutrition, overweight, underweight, and hypovitaminosis D), frailty, sarcopenia, mobility issues, and mental health issues (including depression, anxiety, and suicide) and cognitive health. We included English-language papers with full-text access and excluded studies on the general or younger Asian population. Due to the scarcity of data, we included articles regardless of publication date to ensure a comprehensive review.

LIFE EXPECTANCY, HEALTHY LIFE EXPECTANCY, AND INEQUALITIES ACROSS ASIA

Life expectancy and HALE at birth are crucial indicators of a nation's health.^[1] The COVID-19 pandemic disrupted the upward trend in life expectancy and HALE in Asia, highlighting the need for more resilient healthcare systems.^[2] HALE measures the average number of years a person can expect to live in good health, free from disability. It is a key metric used by the WHO to assess a country's overall health and well-being. By combining longevity and quality of life, HALE provides a holistic assessment of the health progress of countries.

Average life expectancy at birth in Asian countries ranges from 68 to 84 years, whereas the HALE remains lower at 60–74 years, highlighting a substantial gap between longevity and years lived without disability [Figure 1]. The rising burden of noncommunicable diseases (NCDs) and age-related disability are the primary causes of this disparity.^[2,3] While gross domestic product per capita plays a crucial role in boosting longevity through economic growth and healthcare investment, it is not sufficient on its own [Figure 2].^[4] Healthcare leaders must strategically invest in both preventive and curative care of chronic diseases and NCDs to promote healthy aging, minimize disability, and bridge the gap between life expectancy and HALE.^[5]

Asian countries face significant challenges in improving longevity and HALE primarily due to weak public healthcare

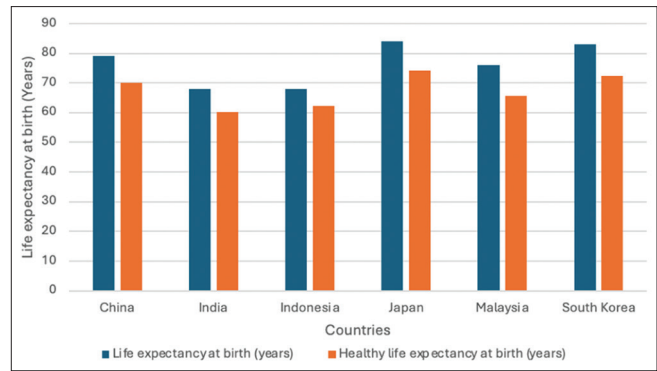


Figure 1: Life expectancy and healthy life expectancy at birth for both genders, 2022* (1) United Nations Population Division. World Population Prospects: 2022 Revision; or derived from male and female life expectancy at birth from sources such as: (2) Statistical databases and publications from national statistical offices; (3) Eurostat: Demographic statistics

systems, inadequate healthcare infrastructure and policies, insufficient healthcare financing, and a lack of robust healthcare governance. These factors contribute to a reactive rather than proactive approach in addressing the growing burden of NCDs and age-related disability.^[6]

To significantly enhance life expectancy and HALE health care leaders must urgently implement comprehensive NCD interventions that prioritize the prevention of chronic diseases and age-related disability. By addressing multifaceted resource constraints, empowering primary health care, leveraging private and nongovernment partnerships, expanding NCDs services to underserved rural areas, and prioritizing disease prevention, we can achieve substantial health gains.^[3,7] A well-planned strategic 5-year plan, coupled with rigorous research and evaluation to assess cost-effectiveness and identify deficiencies, will ensure that NCD interventions are effective and tailored to specific national contexts. Ultimately, these efforts will not only alleviate the burden of NCDs and reduce healthcare costs but also enhance longevity and maximize disability-free years.^[6]

NUTRITION

Nutrition is important in healthy aging.^[8] Nutritional issues in older adults include being overweight, underweight, and having hypovitaminosis D.

Studies have highlighted the increasing prevalence of overweight among older adults in Asia.^[9] According to the Fifth National Physical Fitness Monitoring Report in China, 41.7% of their older adults are overweight.^[10] In India, the prevalence of overweight older adults was higher among women (18.15% in rural areas and 46.62% in urban areas) compared to men (12.9% in rural areas and 30.61% in urban areas).^[11] A national health research in Indonesia showed the prevalence of being overweight among older adults is about 10%.^[12] The Japan National Health and Nutrition Survey (J-NHNS) found the prevalence of overweight is 22.5%.^[13] In Malaysia,

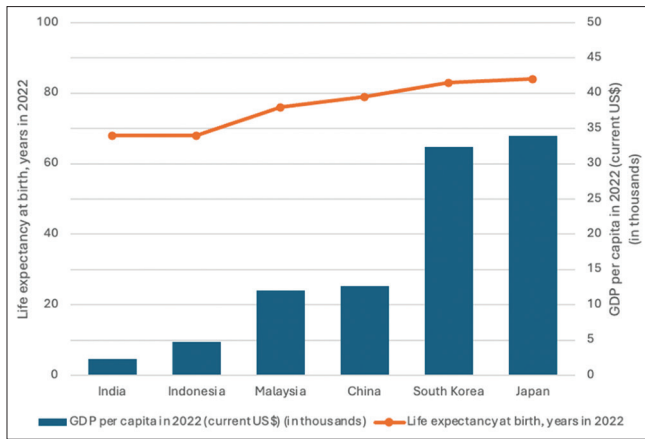


Figure 2: Life expectancy versus gross domestic product per capita for Asian countries, 2022* GDP = Gross domestic product. GDP per capita is expressed in current US\$. GDP per capita is adjusted for inflation and differences in the cost of living between countries. * (1) United Nations Population Division. World Population Prospects: 2022 Revision; or derived from male and female life expectancy at birth from sources such as (2) Statistical databases and publications from national statistical offices; (3) Eurostat: Demographic statistics. World Bank national accounts data, and OECD National Accounts data file

almost 40% of those above 65 are overweight,^[14] whereas in South Korea, 41.6% are overweight.^[15]

Nevertheless, there are many underweight older Asian people. China reported a population underweight risk of 21%.^[16] In India, 38.0% of the rural population is underweight despite the overall prevalence being 22.0%.^[17] Indonesia reports up to 14.6% being underweight,^[18] whereas Malaysia reported 7.3%,^[19] with the rates increasing to 10.5% for those above 75 years. The prevalence of older adults being underweight is 8%–9% in Japan^[13] and 3.6% in South Korea^[20] [Figure 3].

Hypovitaminosis D is rampant with pooled prevalence in Asia being about 68%. China reported more than one-third of older adult participants had Vitamin D inadequacies.^[21] In some parts of India (especially the northern states), Vitamin D deficiency (91.2%) was reported in those above 50 years of age.^[22] Vitamin D deficiency is thought to be rare in the Indonesian population except among institutionalized elderly females where the prevalence is 35.1%.^[23] The prevalence of hypovitaminosis D among Japanese adults showed a seasonal variation with 47.7% during summer and 82.2% during winter.^[24] Despite being close to the equator, more than half of Malaysians have insufficient Vitamin D levels. In South Korea, Vitamin D deficiency was found in 65.7% of males and 76.7% of females.^[25]

National policies are needed to address nutritional issues in older adults. These include setting up dietary guidelines for the older adults, such as the Malaysian Dietary Guidelines for Older Persons or promoting healthy lifestyles through the National Health Plan 2030 in South Korea. As hypovitaminosis D is a global problem, it is important to have regional policies to address it such as the National Health Commission of the

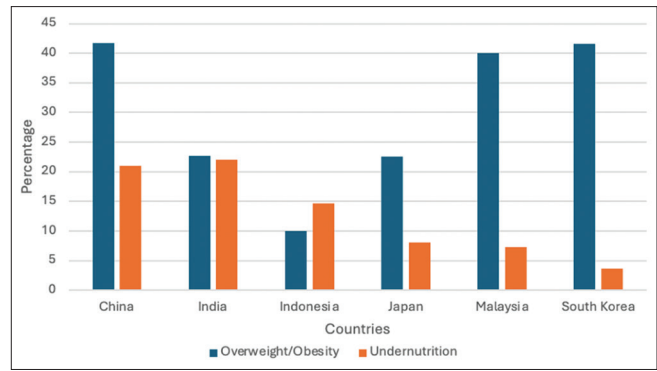


Figure 3: Overweight (including obesity) and undernutrition in Asian countries (2018–2022) [9–20]

People's Republic of China and the Elderly Health Promotion Project in Japan.

SARCOPENIA AND FRAILITY

Sarcopenia is the age-related loss of skeletal muscle mass, strength, and function, increasing frailty risk which starts around age 50 years, with muscle mass declining by 1%–2% and strength by 1.5%–3% annually.^[26] Frailty is a common condition among older adults that significantly impacts their health and quality of life.

The Asian Working Group for Sarcopenia (AWGS) has developed specific criteria to diagnose sarcopenia and frailty in Asian populations, recognizing the unique differences in body composition and aging in this region compared to Western standards.^[27] Based on the evaluation of AWGS, the following are the findings regarding the prevalence and incidence of sarcopenia in six Asian countries.^[28]

In China, the prevalence of sarcopenia is estimated to be between 10.1% and 20%, and the average frailty prevalence is around 7% to 16.4% depending on the region and diagnostic criteria used. In India, poor nutrition and unequal access to healthcare contribute to sarcopenia, affecting 11%–21% of the population, and frailty, affecting 19%–26% of the population. In Indonesia, sarcopenia affects 15%–20% of older adults, while frailty impacts 10.2%–22.2%, driven by limited healthcare access and malnutrition. In Japan, sarcopenia is 8%–22% and frailty is 7.8%–15%. In South Korea, sarcopenia is 7%–25%, and frailty is 10%–15%, with rising obesity and diabetes as contributing factors. Malaysia reports sarcopenia rates of 14%–24%, and frailty at 9.3%–16%, linked to urbanization^[28–30] [Figures 4 and 5, respectively].

These six countries show varying rates of sarcopenia and frailty due to differences in aging populations, healthcare infrastructure, and socioeconomic factors.^[29] They proposed different strategies to prevent sarcopenia in aging Asians commonly based on physical exercises, nutritional education, and regular health check-ups.^[30]

Sarcopenia typically starts around age 50 years, with muscle mass declining by 1%–2% and strength by 1.5%–3% annually.

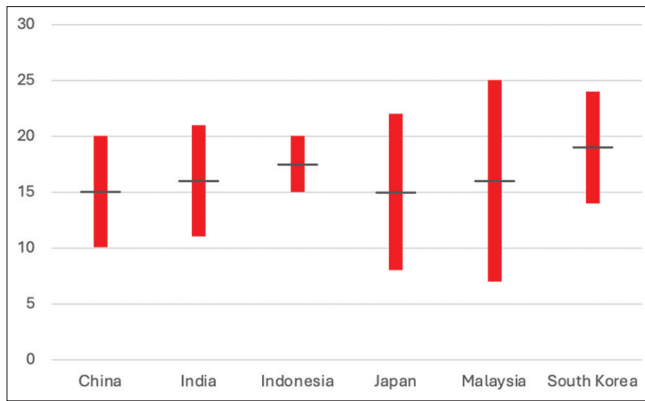


Figure 4: Prevalence of sarcopenia in Asian countries^[29-32]

Asian older adults should prioritize resistance and aerobic exercises to maintain muscle mass. Protein-rich diets and sufficient Vitamin D intake are essential, as Asian diets may lack these nutrients compared to European diets. Sources such as fish and legumes are key, along with regular sunlight exposure. Early intervention, regular health check-ups, and an active lifestyle can prevent or delay sarcopenia, improving overall health and quality of life as adults age.

MOBILITY DISORDERS

Mobility is crucial for healthy aging, impacting independence, quality of life, and overall well-being. With the global population aging, mobility issues in older adults present growing challenges, particularly in rehabilitation medicine. Mobility limitations affect 30%–40% of individuals aged 65 and older, with over 50% affected by age 85. These limitations lead to reduced social participation, higher fall risk, hospitalization, and mortality. Mobility impairments are often linked to conditions such as sarcopenia, osteoarthritis, and cognitive decline, complicating care.^[31,32]

Comprehensive geriatric assessments are essential to diagnose and address mobility disorders. These assessments consider physical functioning, cognitive status, nutrition, and psychosocial factors, using tools like the timed up and go test and gait analysis to evaluate functional mobility and fall risk.^[33]

Rehabilitation approaches include structured exercise programs, which are key to improving mobility in older adults. Multicomponent exercise interventions combining aerobic, resistance, balance, and flexibility training have shown significant benefits, enhancing functional mobility, muscle strength, and balance, and reducing fall risk.^[34]

Advances in assistive technology, such as smart walkers, exoskeletons, and virtual reality tools, have transformed mobility management. These technologies not only improve mobility but also provide data for personalized treatment and monitoring progress. Environmental modifications, such as home adaptations and age-friendly public spaces, further support older adult's mobility.^[35]

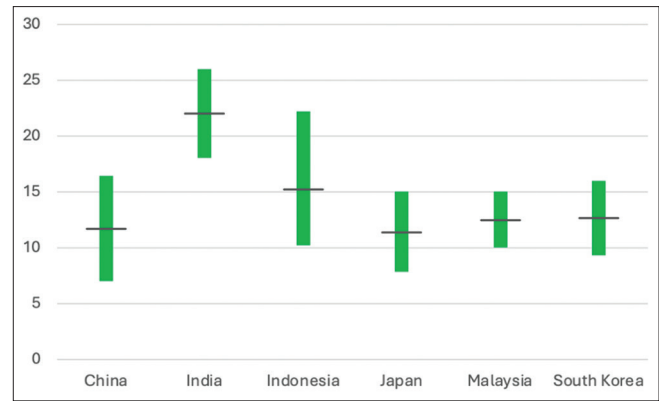


Figure 5: Prevalence of frailty in Asian countries^[29-32]

A multidisciplinary approach, involving collaboration among rehabilitation physicians, physical and occupational therapists, psychologists, and social workers, is essential for effective mobility management. This comprehensive care ensures that all mobility needs, from physical rehabilitation to psychosocial support, are met. As research and clinical innovations advance, more effective strategies will continue to emerge, improving mobility outcomes and quality of life for older adults.

MENTAL HEALTH ISSUES

Mental health issues among older adults are often overlooked and underdiagnosed. In Asia, the prevalence of geriatric depression varies across different countries and age groups [Figure 6].^[36] India reports the highest prevalence, followed by China and Malaysia, whereas Japan exhibits the lowest. When examining country-specific age cohorts, older adults in Malaysia and Indonesia aged 60–64 demonstrate a higher prevalence of depression. China and India exhibit a similar trend among those aged 65–69. Interestingly, Japan and South Korea report a higher prevalence of depression among individuals over 70. Gender-based analysis reveals that women generally experience depression more often than men [Figure 7].^[37]

Anxiety is prevalent among older adults in Asia, with varying rates across countries and age groups [Figure 8].^[36] Malaysia reports the highest prevalence of anxiety, followed by Indonesia, China, and India. Conversely, Japan exhibited the lowest rates. Country-specific age-group analysis revealed that older adults aged 60–64 in India, Indonesia, Japan, Malaysia, and South Korea experienced the highest rates of anxiety. In contrast, China showed a different trend, with older adults aged 70 and above reporting higher prevalence. Gender-based analysis indicates that women generally experience anxiety more often than men [Figures 9].^[36,38-41]

The prevalence of elderly suicide across Asia presents a critical public health concern.^[42] The crude suicide rate per 100,000 population is higher among individuals aged 85 and above, underscoring a pressing need for intervention.^[42,43] The data show a clear correlation between increasing age and the

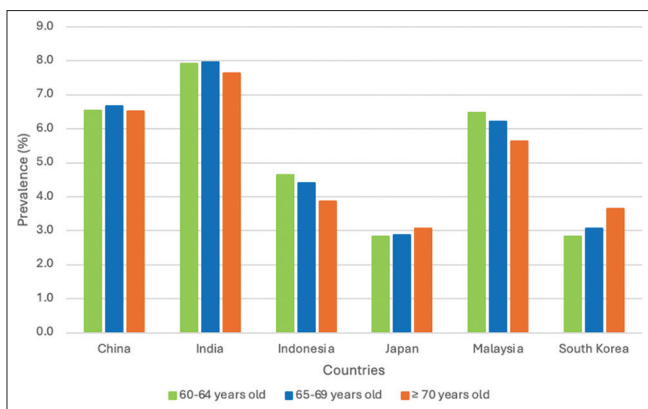


Figure 6: Depressive disorder prevalence by age group, 2021. * - IHME, Global Burden of Disease (2024) – with major processing by Our World in Data. Note - Estimated share of people who have depressive disorders, whether they are diagnosed, based on representative surveys, medical data, and statistical modelling

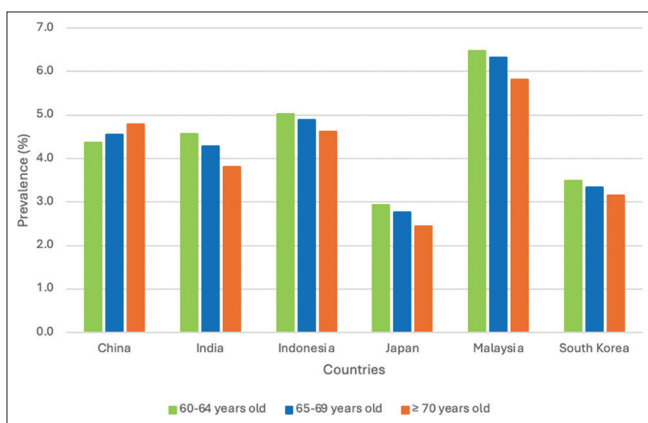


Figure 8: Anxiety disorder prevalence by age group, 2021. * - IHME, Global Burden of Disease (2024) – with major processing by Our World in Data. Note - Estimated share of people with anxiety disorders, whether they are diagnosed, based on representative surveys, medical data, and statistical modelling

likelihood of suicide. Despite higher rates of depression and anxiety among older women, older men are at a higher risk of suicide. South Korea exhibits the highest overall crude suicide rate, followed by China and India, whereas Indonesia reports the lowest [Figure 10].^[42]

Financial instability, bereavement, multimorbidity, and limited support services significantly increase the risk of mental health problems in older adults.^[44] In Asian countries, cultural expectations often place a heavy mental health burden on older caregivers caring for spouses with dementia or other chronic illnesses. The migration of younger generations to cities or foreign countries can leave older adults feeling lonely, and impoverished, exacerbating their mental health conditions. This is further compounded by disparities in resources and gaps in policy implementation, particularly at the primary care level, which is often the first point of contact for older adults. Mental health issues among older adults may vary between urban and rural areas due to living conditions and the

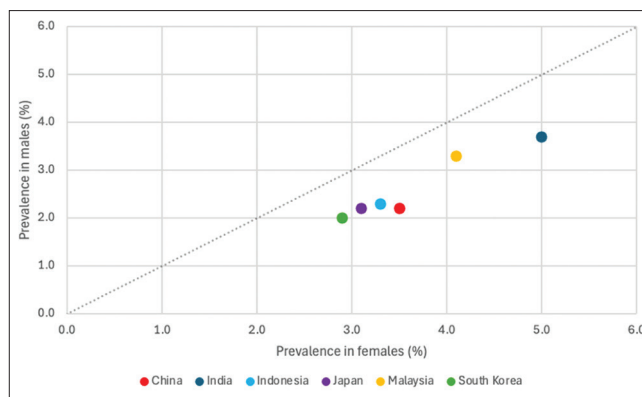


Figure 7: Depressive disorder Prevalence males versus females, 2021* - IHME, Global Burden of Disease (2024) – with major processing by Our World in Data. Note - To allow for comparisons between countries, this metric is age standardized. Estimated share of people who had depressive disorders, whether or not they were diagnosed, based on representative surveys, medical data, and statistical modeling

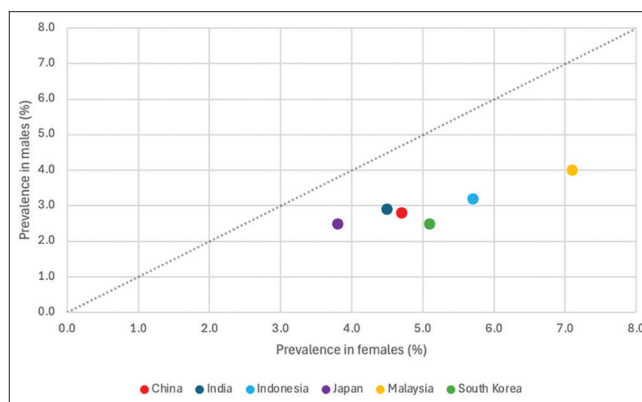


Figure 9: Anxiety disorder prevalence males versus females, 2021* - IHME, Global Burden of Disease (2024) – with major processing by Our World in Data. Note - To allow for comparisons between countries, this metric is age standardized. Estimated share of people with anxiety disorders, whether they are diagnosed, based on representative surveys, medical data, and statistical modeling

availability of essential services. More research is needed in Asian countries to understand the urban–rural mental health disparities and develop targeted interventions.

A multifaceted approach is essential to address the growing mental health crisis in Asia.^[42] Effective leadership and robust mental health governance are crucial for developing and implementing comprehensive policies and laws. Investing in integrated, person-centered mental and social care services at the community level is vital. Strengthening human resources and training to improve access to mental health services in primary care, while expanding mental health hospitals, is equally important. Promoting mental health and healthy aging in health care and communities, along with investing in mental health education at all ages, is crucial for positive aging, resilience, and overall well-being. Strengthening the information system through targeted research to evaluate service gaps and identify core mental health indicators is crucial.

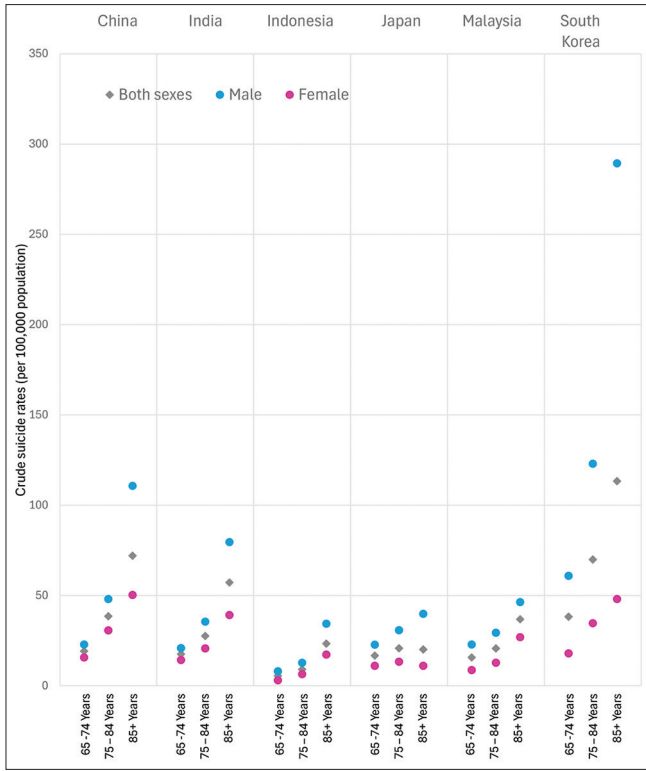


Figure 10: Crude suicide rates (per 100,000 population) in older adults across Asia in 2019*. *- World Health Organization (WHO, 2019) with permission

COGNITIVE DECLINE AND DEMENTIA

The highest number of dementia cases is currently reported in Asia (22.9 million), which is more than double the number reported in Europe (10.5 million) or the Americas (9.4 million). The estimated prevalence of dementia among people aged 65 and older is approximately 10%–12% in South Korea, 12%–15% in Japan, 6%–8% in China, 5%–7% in Malaysia, and 4%–6% in India. In Asia, dementia and mild cognitive impairment are significant concerns in this demographic, yet they are often overlooked due to stigma and lack of awareness, which prevents many from seeking necessary support. The disease burden remains high in countries with a higher prevalence of dementia, as indicated by significant DALYs in the elderly population [Figure 11]. However, in countries with lower reported prevalence, the actual burden may be underestimated due to diagnostic challenges, meaning that the true prevalence could be higher than recorded, as many cases go undiagnosed. Factors such as limited healthcare access, cultural attitudes delaying diagnosis, and inadequate early screening contribute to underdiagnosis, which exacerbates the overall impact of the disease [Figure 11].^[45-48]

Several risk factors contribute to cognitive health decline in older adults across Asia. Lifestyle choices, social determinants, environmental factors, and chronic conditions play significant roles. Unhealthy lifestyle choices, low education levels, social isolation, and limited healthcare access exacerbate these risks. Environmental issues such as pollution and limited green

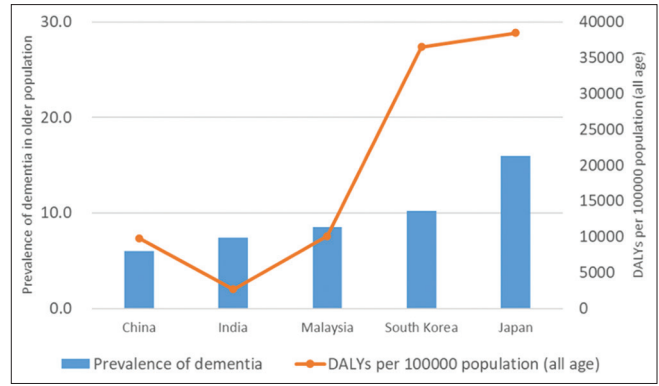


Figure 11: Prevalence and DALYs of Dementia in Asia, 2021*. *- WHO, Global Dementia Observatory Provisional Country Profile and Department of Data and Analytics, Estimated DALY by cause, sex, and country or area, 2021

spaces, combined with chronic conditions such as hypertension, diabetes, and cardiovascular diseases, further increase the risk of cognitive impairment.^[49] Research indicates that cognitive abilities decline with age, but education positively impacts cognitive performance. Better health correlates with better cognitive abilities, while childhood nutrition, as indicated by height, also affects later-life cognitive function. Marital status plays a role, with married individuals generally having better cognitive health. In addition, gender differences in educational attainment affect cognitive performance, with women often outperforming men when education levels are considered.^[50,51]

To promote cognitive health, specific aspects of healthy aging must be strengthened. These include regular physical activity, which improves blood flow to the brain and reduces the risk of cognitive decline, and mental stimulation through cognitive training exercises, which help maintain neural connections. Social engagement is also critical, as maintaining meaningful interactions can reduce the risk of isolation-related cognitive deterioration. Moreover, managing chronic diseases such as hypertension, diabetes, and heart disease plays a key role in preventing conditions that can accelerate cognitive decline. Focusing on these aspects of healthy aging can help preserve cognitive function and delay the onset of dementia. While some Asian countries have established comprehensive dementia care systems, including institutions like a National Institute of Dementia for coordination, regional dementia centers for local implementation, and community-based dementia centers for services such as diagnosis and counseling, others are still lacking such infrastructure. This gap highlights the need for developing stronger, more cohesive dementia prevention and care systems across the region to ensure that all patients and families have access to essential care and support services, regardless of location.^[52]

Asian countries are increasingly focusing on preventing and reducing dementia risk through various strategies.^[53] Public awareness campaigns aim to educate the public that dementia is a disease, not a natural part of aging. Promoting healthy lifestyles through physical exercise, mental stimulation, and

social engagement is essential. Early detection programs and community care system enhancements are also critical for effective dementia management. Despite these efforts, challenges persist. Limited awareness and cultural stigma often hinder help-seeking behavior. Misconceptions about dementia being a natural part of aging can delay diagnosis and treatment. Resource limitations and inadequate policy frameworks further complicate care.^[52,54] In addition, professional caregivers often lack sufficient training in dementia care, and family caregivers face a lack of support systems. Addressing these challenges requires a comprehensive and culturally sensitive approach to improve dementia care and support in Asia.^[55,56]

CONCLUSION

Given the pressing challenges facing our aging population, we urge the Minister of Health to prioritize the development of a comprehensive, 5-year National Policy for Older Adults. This policy should focus on four key dimensions: Physical and mental health, economic security, productive work, and social engagement.

First, research in disease epidemiology and aging must be prioritized to address knowledge gaps about the health needs of older adults, inform targeted interventions, and evaluate health service effectiveness.

Second, efforts should focus on reducing air pollution and promoting independent living with financial security and employment flexibility, while encouraging healthy lifestyles through adequate nutrition, and physical activity.

Third, primary care should be strengthened with a focus on preventing chronic diseases and age-related disabilities. The policy should prioritize addressing ageism, dementia, and mental health stigma while simultaneously promoting mental and cognitive health awareness across all age groups.

The proposed policy should collaborate with relevant ministries to create older adults and disability-friendly cities, and public spaces, promoting physical independence. To cultivate holistic healthy aging, the policy should prioritize providing opportunities for older adults to participate in life-long learning and engage in leisure activities, with age-friendly neighborhoods and communities.

Finally, the policy should implement one-stop healthcare solutions that provide comprehensive care as a single access point for a wide range of health conditions. These changes will simplify the healthcare experience for patients and families, making it more efficient and patient centered.

These policies should be well integrated to ensure synergy and should be continuously evaluated and updated to reflect the evolving needs of the aging population. By implementing these strategies, we can ensure that older adults experience a positive aging journey, enjoy a high quality of life, and become valuable contributors to society. These initiatives will not

only enhance the well-being of older adults but also lay the groundwork for a more resilient and sustainable healthcare system that benefits generations to come.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Jaba E, Balan CB, Robu IB. The relationship between life expectancy at birth and health expenditures estimated by a cross-country and time-series analysis. *Procedia Econ Finance* 2014;15:108-14.
- World Health Organization. World Health Statistics: Monitoring Health for the SDGs, Sustainable Development Goals; 2024. Available from: <https://www.who.int/publications/i/item/9789240094703>. [Last accessed on 2024 Oct 01].
- Ahmed SM, Krishnan A, Karim O, Shafique K, Naher N, Srishti SA, *et al.* Delivering non-communicable disease services through primary health care in selected south Asian countries: Are health systems prepared? *Lancet Glob Health* 2024;12:e1706-19.
- Uddin I, Khan MA, Tariq M, Khan F, Malik ZK. Revisiting the determinants of life expectancy in Asia-exploring the role of institutional quality, financial development, and environmental degradation. *Environ Dev Sustain* 2023;26:11289-309. Available from: <https://link.springer.com/10.1007/s10668-023-03283-0>. [Last accessed on 2024 Sep 29].
- AbdulRaheem Y. Unveiling the significance and challenges of integrating prevention levels in healthcare practice. *J Prim Care Community Health* 2023 Jan-Dec;14:21501319231186500.
- Kodali PB. Achieving universal health coverage in low- and middle-income countries: Challenges for policy post-pandemic and beyond. *Risk Manag Healthc Policy* 2023;16:607-21.
- Pinter KA, Zhang H, Liu C, Tran B, Chokshi M, Lucerno-Priso DE, *et al.* Elements and performance indicators of integrated healthcare programmes on chronic diseases in six countries in the Asia-Pacific region: a scoping review. *Int J Integr Care* 2021;21:3.
- Leitão C, Mignano A, Estrela M, Fardilha M, Figueiras A, Roque F, *et al.* The effect of nutrition on aging-a systematic review focusing on aging-related biomarkers. *Nutrients* 2022;14:554.
- Lui DT, Ako J, Dalal J, Fong A, Fujino M, Horton A, *et al.* Obesity in the Asia-pacific region: Current perspectives. *Asian Pac Soc Cardiol* 2024;3:e21. Available from: <https://www.japscjournal.com/articleindex/japsc.2023.68>. [Last accessed on 2024 Sep 29].
- Symposium19-3. Tairyoku Kagaku. Vol. 70. 2021. p. 71. Available from https://www.jstage.jst.go.jp/article/jspfs/70/1/70_71/_article/-char/ja/. [Last accessed on 2024 Sep 29].
- Saha A, Mandal B, Muhammad T, Barman P, Ahmed W. Gender-specific determinants of overweight and obesity among older adults in India: Evidence from a cross-sectional survey, 2017-18. *BMC Public Health* 2023;23:2313.
- UNICEF. Measles Vaccination in Children. Available from: <https://www.unicef.org/turkiye/en/press-releases/maintaining-routine-immunization-services-vital-during-covid-19-pandemic-who-and>. [Last accessed on 2024 Oct 02].
- Tarui I, Okada E, Okada C, Saito A, Takimoto H. Trends in BMI among elderly Japanese population: Findings from 1973 to 2016 Japan National Health and Nutrition Survey. *Public Health Nutr* 2020;23:1907-15.
- Institute for Public Health (IPH), National Institutes of Health, Ministry of Health Malaysia. National Health and Morbidity Survey (NHMS) 2019: Vol. 1: NCDs – Non-Communicable Diseases: Risk Factors and other Health Problems; 2020. Available from: https://iku.moh.gov.my/images/IKU/Document/REPORT/NHMS2019/Report_NHMS2019-NCD_v2.pdf. [Last accessed on 2024 Oct 02].
- Lee K. Trends in prevalence of overweight and obesity, self-perceived overweight or obesity, and weight loss efforts among older adults in South Korea, 2005-2021. *Prev Med* 2024;180:107854.

16. Song P. Devoting attention to the management of community-acquired pneumonia for the elderly. *Drug Discov Ther* 2020;14:151-2.
17. Nguyen PH, Scott S, Headey D, Singh N, Tran LM, Menon P, *et al.* The double burden of malnutrition in India: Trends and inequalities (2006-2016). *PLoS One* 2021;16:e0247856.
18. Dewiasty E, Agustina R, Saldi SR, Pramudita A, Hinssen F, Kumaheri M, *et al.* Malnutrition prevalence and nutrient intakes of Indonesian community-dwelling older adults: A systematic review of observational studies. *Front Nutr* 2022;9:780003.
19. Shyam S, Khor GL, Ambak R, Mahadir B, Hasnan M, Ambu S, *et al.* Association between dietary patterns and overweight risk among Malaysian adults: Evidence from nationally representative surveys. *Public Health Nutr* 2020;23:319-28.
20. Joh HK, Kwon H, Son KY, Yun JM, Cho SH, Han K, *et al.* Trends in underweight and severe underweight disparities in Korean adults and older adults: A nationwide, repeated cross-sectional study. *J Nutr Health Aging* 2024;28:100185.
21. Chen J, Yun C, He Y, Piao J, Yang L, Yang X. Vitamin D status among the elderly Chinese population: A cross-sectional analysis of the 2010-2013 China national nutrition and health survey (CNNHS). *Nutr J* 2017;16:3.
22. Ghosh A, Monisha S, Sunny AS, Diwaker L, Issac TG. Prevalence and patterns of Vitamin D deficiency and its role in cognitive functioning in a cohort from South India. *Sci Rep* 2024;14:11215.
23. Setiati S. Vitamin D status among Indonesian elderly women living in institutionalized care units. *Acta Med Indones* 2008;40:78-83.
24. Asakura K, Etoh N, Imamura H, Michikawa T, Nakamura T, Takeda Y, *et al.* Vitamin D status in Japanese adults: Relationship of serum 25-hydroxyvitamin D with simultaneously measured dietary Vitamin D intake and ultraviolet ray exposure. *Nutrients* 2020;12:743.
25. Park JH, Hong IY, Chung JW, Choi HS. Vitamin D status in South Korean population: Seven-year trend from the KNHANES. *Medicine (Baltimore)* 2018;97:e11032.
26. Cruz-Jentoft AJ, Bahat G, Bauer J, Boirie Y, Bruyère O, Cederholm T, *et al.* Sarcopenia: Revised European consensus on definition and diagnosis. *Age Ageing* 2019;48:16-31.
27. Kim M, Won CW. Sarcopenia in Korean community-dwelling adults aged 70 years and older: Application of screening and diagnostic tools from the Asian Working Group for sarcopenia 2019 update. *J Am Med Dir Assoc* 2020;21:752-8.
28. Chen LK, Liu LK, Woo J, Assantachai P, Auyeung TW, Bahyung KS, *et al.* Sarcopenia in Asia: Consensus report of the Asian Working Group for Sarcopenia. *J Am Med Dir Assoc* 2014;15:95-101.
29. Chew ST, Tey SL, Yalawar M, Liu Z, Baggs G, How CH, *et al.* Prevalence and associated factors of sarcopenia in community-dwelling older adults at risk of malnutrition. *BMC Geriatr* 2022;22:997.
30. Lee PH, Macfarlane DJ, Lam TH, Stewart SM. Validity of the International physical activity questionnaire short Form (IPAQ-SF): A systematic review. *Int J Behav Nutr Phys Act* 2011;8:115.
31. Cruz-Jentoft AJ, Sayer AA. Sarcopenia. *Lancet* 2019;393:2636-46.
32. Maresova P, Krejcar O, Maskuriy R, Bakar NA, Selamat A, Truhlarova Z, *et al.* Challenges and opportunity in mobility among older adults – Key determinant identification. *BMC Geriatr* 2023;23:447.
33. Phu S, Kirk B, Bani Hassan E, Vogrin S, Zanker J, Bernardo S, *et al.* The diagnostic value of the short physical performance battery for sarcopenia. *BMC Geriatr* 2020;20:242.
34. Sherrington C, Fairhall NJ, Wallbank GK, Tiedemann A, Michaleff ZA, Howard K, *et al.* Exercise for preventing falls in older people living in the community. *Cochrane Database Syst Rev* 2019;1:CD012424.
35. Porciuncula F, Roto AV, Kumar D, Davis I, Roy S, Walsh CJ, *et al.* Wearable movement sensors for rehabilitation: A focused review of technological and clinical advances. *PM R* 2018;10:S220-32.
36. Dattani S, Rodés-Guirao L, Ritchie H, Roser M. Mental Health. Available from: <https://ourworldindata.org/mental-health>.
37. Baek JY, Lee E, Jung HW, Jang IY. Geriatrics fact sheet in Korea 2021. *Ann Geriatr Med Res* 2021;25:65-71.
38. Kang HJ, Bae KY, Kim SW, Shin IS, Yoon JS, Kim JM. Anxiety symptoms in Korean elderly individuals: A two-year longitudinal community study. *Int Psychogeriatr* 2016;28:423-33.
39. Lu L, Shen H, Tan L, Huang Q, Chen Q, Liang M, *et al.* Prevalence and factors associated with anxiety and depression among community-dwelling older adults in Hunan, China: A cross-sectional study. *BMC Psychiatry* 2023;23:107.
40. Abdul Manaf MR, Mustafa M, Abdul Rahman MR, Yusof KH, Abd Aziz NA. Factors influencing the prevalence of mental health problems among Malay elderly residing in a rural community: A cross-sectional study. *PLoS One* 2016;11:e0156937.
41. Matsuyama S, Otsubo T, Nomoto K, Higa S, Takashio O. Prevalence of generalized anxiety disorder in Japan: A general population survey. *Neuropsychiatr Dis Treat* 2024;20:1355-66.
42. World Health Organization. Mental Health Atlas; 2020. Available from: <https://www.who.int/publications/i/item/9789240036703>. [Last accessed on 2024 Sep 10].
43. World Health Organization. Crude Suicide Rate; 2019. Available from: <https://www.who.int/data/gho/data/themes/mental-health/suicide-rates>. [Last accessed on 2024 Sep 27].
44. Mazumder H, Faizah F, Gain EP, Sharmin Eva I, Ferdouse Mou K, Saha N, *et al.* Effectiveness of mental health interventions for older adults in South Asia: A scoping review. *PLoS One* 2023;18:e0287883.
45. Alzheimer Disease International. Dementia in the Asia and Pacific Region; 2014. Available from: <https://www.alzint.org/resource/dementia-in-the-asia-pacific-region/>. [Last accessed on 2024 Oct 04].
46. Alzheimer Diseases International. World Alzheimer Report; 2022. Available from: <https://www.alzint.org/resource/world-alzheimer-report-2022/>. [Last accessed on 2024 Oct 10].
47. Lam BY, Yiu B, Ampil E, Chen CL, Dikot Y, Dominguez JC, *et al.* High burden of cerebral white matter lesion in 9 Asian cities. *Sci Rep* 2021;11:11587.
48. Results, Table, Charts, about, Institute for Health Metrics and Evaluation, Measure, *et al.* Global Health Data Exchange (GHDx). Available from: <https://vizhub.healthdata.org/gbd-results/>. [Last accessed on 2024 Sep 17].
49. Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S, *et al.* Dementia prevention, intervention, and care: 2020 report of the lancet commission. *Lancet* 2020;396:413-46.
50. Lee AT, Richards M, Chan WC, Chiu HF, Lee RS, Lam LC. Association of daily intellectual activities with lower risk of incident dementia among older Chinese adults. *JAMA Psychiatry* 2018;75:697-703.
51. Kim YJ, So KY, Lee HM, Hahn C, Song SH, Lee YS, *et al.* Changes in dementia treatment patterns associated with changes in the National Policy in South Korea among patients with newly diagnosed Alzheimer's disease between 2011 and 2017: Results from the multicenter, retrospective CAPTAIN study. *BMC Public Health* 2024;24:168.
52. World Health Organization. Risk Reduction of Cognitive Decline and Dementia: WHO Guidelines; 2023. Available from: <https://www.who.int/publications/i/item/9789241550543>. [Last accessed on 2024 Sep 30].
53. Jia J, Zhao T, Liu Z, Liang Y, Li F, Li Y, *et al.* Association between healthy lifestyle and memory decline in older adults: 10 year, population based, prospective cohort study. *BMJ* 2023;380:e072691.
54. Jia J, Wei C, Chen S, Li F, Tang Y, Qin W, *et al.* The cost of Alzheimer's disease in China and re-estimation of costs worldwide. *Alzheimers Dement* 2018;14:483-91.
55. National Institute of Aging. 2024 NIH Alzheimer's and Related Dementias Research Progress Report: Advances and Achievements; 2024. Available from: <https://www.nia.nih.gov/about/2024-nih-dementia-research-progress-report>. [Last accessed on 2024 Sep 30].
56. Seong SJ, Kim BN, Kim KW. Comparative analysis on the policy approaches in the national dementia plans of G7 countries and Korea and their implementation. *J Korean Med Sci* 2023;38:e227.