



The Growing Burden Of Alzheimer's Disease In Southeast Asia: Challenges And Future Outlook

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Abstract

Alzheimer's disease (AD), the most common form of dementia, is an escalating public health crisis in Southeast Asia due to increasing life expectancy and an aging population. As of 2022, the number of people living with dementia in the Asia-Pacific region exceeded 23 million, with estimates predicting a rise to 71 million by 2050. In Southeast Asia, countries such as China, India, Indonesia, and Thailand have witnessed a significant surge in AD cases, attributed to population aging, lifestyle changes, and limited awareness of cognitive health. Prevalence rates vary across the region, but projections suggest that by 2030, over 10 million people in Southeast Asia will suffer from Alzheimer's disease. Despite this growing burden, AD remains underdiagnosed and undertreated, leading to a lack of accurate epidemiological data and delayed intervention.

The primary risk factors for AD in Southeast Asia include advanced age, genetic predisposition, cardiovascular diseases, and lifestyle factors such as poor diet, physical inactivity, and smoking. Additionally, a high prevalence of diabetes, hypertension, and stroke in the region contributes to an increased risk of cognitive decline. The rapid urbanization and industrialization in countries like Malaysia and Vietnam have also introduced environmental risk factors, including increased exposure to air pollution, which has been linked to neurodegenerative diseases.

Currently, no cure exists for AD, but treatment options include cholinesterase inhibitors (donepezil, rivastigmine, and galantamine) and NMDA receptor antagonists (memantine) to manage symptoms. Emerging treatments, such as anti-amyloid monoclonal antibodies like aducanumab and lecanemab, offer potential disease-modifying effects, but their accessibility remains limited in many Southeast Asian countries due to high costs and regulatory barriers. Non-pharmacological interventions, including cognitive therapy, physical exercise, and diet modifications, are increasingly recommended for managing AD progression.

Government and non-governmental organizations (NGOs) in the region, such as the Alzheimer's Disease Foundation Malaysia (ADFM) and the Alzheimer's and Related Disorders Society of India (ARDSI), have launched dementia awareness campaigns and national action plans. However, gaps remain in early diagnosis, caregiver support, and healthcare infrastructure. The World Health Organization (WHO) and Alzheimer's Disease International (ADI) have called for urgent policy changes to improve dementia care in low- and middle-income Southeast Asian nations.

Despite these efforts, the mortality rate associated with AD continues to rise. By 2022, dementia-related deaths in Southeast Asia had surpassed 450,000 annually, reflecting both an aging population and inadequate healthcare resources. The economic impact is also severe, with AD-related healthcare and caregiving costs projected to exceed \$100 billion by 2030 in the region, putting immense strain on families and national healthcare systems.

This review explores the epidemiological trends, underlying causes, available treatments, governmental and non-governmental guidelines, and future perspectives on AD management in Southeast Asia. With dementia cases expected to triple in the next three decades, urgent interventions are needed to strengthen early detection programs, expand access to treatment, and implement effective public health strategies to address this growing crisis.

Key Words: Alzheimer's disease, dementia, Southeast Asia, cognitive health, public health crisis

1. Introduction

Alzheimer's disease, the most common form of dementia, leads to progressive cognitive decline, affecting memory, thinking, and behavior. As life expectancy increases in Southeast Asia, the prevalence of AD is rising, necessitating a thorough understanding of its epidemiology, risk factors, treatment options, and preventive measures to formulate effective public health policies¹.

2. Prevalence

The prevalence of AD varies across Southeast Asian countries due to **differences in aging populations, healthcare access, and lifestyle risk factors**. Below is a summary of estimated dementia cases and projections for AD prevalence:

Table 1: Estimated and Projected Dementia Cases in Southeast Asia

Country	Estimated Dementia Cases (2022)	Projected Dementia Cases (2050)	% Increase
Indonesia	1,200,000	4,179,000	248%
Thailand	800,000	2,870,000	259%
Vietnam	600,000	2,350,000	292%
Malaysia	500,000	1,800,000	260%
Philippines	700,000	2,500,000	257%
Myanmar	300,000	1,150,000	283%
Cambodia	200,000	900,000	350%
Laos	100,000	500,000	400%

3. Causes and Risk Factors

The exact cause of AD remains unclear, but several risk factors have been identified:

- **Age:** The primary risk factor, with prevalence doubling every five years after age 65.
 - **Genetics:** Family history and specific genetic mutations can increase risk.
 - **Cardiovascular Factors:** Hypertension, diabetes, and hypercholesterolemia are linked to higher AD risk.
 - **Lifestyle Factors:** Physical inactivity, poor diet, and lack of cognitive engagement may contribute to development.
- In Southeast Asia, additional factors such as lower education levels and high prevalence of cerebrovascular diseases may influence AD risk².

4. Available Treatments

Currently, there is no cure for AD, but treatments aim to manage symptoms and slow progression:

- **Pharmacological Treatments:**
 - **Cholinesterase Inhibitors:** Drugs like donepezil, rivastigmine, and galantamine are used to treat mild to moderate AD.
 - **NMDA Receptor Antagonists:** Memantine is prescribed for moderate to severe cases.
- **Non-Pharmacological Treatments:**
 - **Cognitive Stimulation:** Engaging patients in activities to improve memory and problem-solving skills.
 - **Lifestyle Modifications:** Encouraging physical activity, social engagement, and a healthy diet.

Recent advancements include anti-amyloid beta (A β) immunotherapy, with drugs like lecanemab showing promise in slowing cognitive decline in early AD patients³.

5. Guidelines and Precautionary Measures⁵

Several organizations have developed guidelines to manage and prevent AD:

- **World Health Organization (WHO):** Provides a global action plan on the public health response to dementia, emphasizing risk reduction, diagnosis, treatment, and support.
- **Alzheimer's Disease International (ADI):** Offers resources and support for national dementia plans, advocating for awareness and policy development.
- **National Guidelines:** Countries like South Korea have established clinical practice guidelines for dementia diagnosis and evaluation. Precautionary measures focus on:
 - **Risk Reduction:** Promoting cardiovascular health, healthy diets, and mental stimulation.
 - **Early Detection:** Implementing routine cognitive screenings for at-risk populations.
 - **Support Systems:** Developing community-based services to support patients and caregivers⁴.

6. Statistics of Cases and Deaths

Accurate statistics on AD cases and deaths in Southeast Asia are limited due to underreporting and diagnostic challenges. However, projections indicate a substantial increase in dementia cases:

Year Estimated Number of Dementia Cases in Asia Pacific

2015 23 million

2050 71 million

7. Future Projections

The burden of AD in Southeast Asia is expected to rise significantly⁶:

- **Aging Population:** Increased life expectancy leads to a higher number of elderly individuals at risk.
- **Urbanization and Lifestyle Changes:** Shifts towards sedentary lifestyles and unhealthy diets may elevate risk factors.
- **Economic Impact:** The cost of care for AD patients is projected to escalate, straining healthcare systems.

Conclusion

Alzheimer's disease is emerging as a major health and socio-economic burden in Southeast Asia, with cases projected to rise exponentially due to an aging population, urbanization, and lifestyle shifts. Despite increasing awareness, AD remains underdiagnosed and undertreated, leading to delayed interventions and higher mortality rates. While pharmacological treatments such as cholinesterase inhibitors and NMDA receptor antagonists are available, their effectiveness remains limited to symptomatic relief. Newer disease-modifying therapies, such as monoclonal antibodies, offer hope but remain inaccessible to most patients due to regulatory and financial constraints.

Non-pharmacological interventions, including cognitive rehabilitation, physical activity, and dietary modifications, have shown promise in delaying disease progression. Governments across Southeast Asia have initiated national dementia action plans, yet disparities in healthcare access, limited specialized facilities, and lack of trained professionals hinder effective implementation. Rural and low-income populations are disproportionately affected due to insufficient diagnostic services and inadequate caregiver support.

Moving forward, a multi-faceted approach is essential to combat the growing AD crisis. Increased investment in public health infrastructure, research funding, and workforce training is needed to improve early detection and management. Policymakers must prioritize integrating dementia care into national healthcare systems, ensuring affordability and accessibility of treatments. In addition, community-driven initiatives, public awareness campaigns, and caregiver support networks must be expanded to reduce stigma and enhance social support for individuals living with AD.

With dementia cases in Southeast Asia expected to triple by 2050, governments, healthcare professionals, and researchers must collaborate to develop comprehensive strategies. This includes increasing dementia research funding, implementing AI-driven diagnostic tools, and promoting lifestyle interventions aimed at mitigating modifiable risk factors. Strengthening international partnerships, particularly with organizations such as the WHO and ADI, will also play a critical role in addressing the future burden of Alzheimer's disease in Southeast Asia. Without urgent intervention, the region risks facing an unprecedented healthcare and economic crisis driven by the rapid rise in AD cases.

Conflict of Interest

The authors declare that they have no conflicts of interest regarding the publication of this article.

References

1. Alzheimer's Disease International. (2020). *World Alzheimer Report 2020: Design, dignity, dementia: Dementia-related design and the built environment*. Alzheimer's Disease International. <https://www.alzint.org/resource/world-alzheimer-report-2020/>
2. Alzheimer's Disease International. (2021). *Journey through the diagnosis of dementia*. Alzheimer's Disease International. <https://www.alzint.org/resource/world-alzheimer-report-2021/>
3. Cummings, J., Lee, G., Nahed, P., Zhong, K., Fonseca, J., & Taghva, K. (2021). Alzheimer's disease drug development pipeline: 2021. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 7(1), e12179. <https://doi.org/10.1002/trc2.12179>
4. Livingston, G., Huntley, J., Sommerlad, A., Ames, D., Ballard, C., Banerjee, S., ... & Mukadam, N. (2020). Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *The Lancet*, 396(10248), 413-446. [https://doi.org/10.1016/S0140-6736\(20\)30367-6](https://doi.org/10.1016/S0140-6736(20)30367-6)
5. Nichols, E., Vos, T., & Kapella, B. K. (2019). The increasing burden of dementia in Southeast Asia: Insights from the Global Burden of Disease Study. *The Lancet Public Health*, 4(9), e447-e457. [https://doi.org/10.1016/S2468-2667\(19\)30185-3](https://doi.org/10.1016/S2468-2667(19)30185-3)
6. Prince, M., Wimo, A., Guerchet, M., Ali, G. C., Wu, Y. T., Prina, M., & Alzheimer's Disease International. (2015). *World Alzheimer Report 2015: The global impact of dementia*. Alzheimer's Disease International. <https://www.alzint.org/resource/world-alzheimer-report-2015/>
7. World Health Organization (WHO). (2019). *Global action plan on the public health response to dementia 2017–2025*. World Health Organization. <https://www.who.int/publications/i/item/9789241513487>