

A Comprehensive Review of Most Influential Risk Factors for Dementia among Elderly People in Asian Countries

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Abstract

Dementia is characterised by a group of symptoms that are typically defined by memory loss, behavioural changes, and the subsequent loss of cognitive and social functioning caused by progressive neurological disorders. It represents one of the greatest global challenges for health and social care in the 21st century. This review aimed to identify the most influential risk factors for dementia among elderly populations in Asian countries. Seven full-text, peer-reviewed articles from primary studies were obtained from PubMed Central (3), Frontiers (1), ScienceDirect (1), BioMed Central (1) and Google Scholar (1) databases. The seven studies published between 2018 and 2025 were selected for the review including 04 cross-sectional, 01 comparative case-control and 02 retrospective cohort designs. The research studies selected were conducted in China, India, Japan, Malaysia, South Korea, Taiwan, and Sri Lanka. The findings from this review were categorised into three themes synthesised and highlighted the multifaceted nature of dementia risk among older adults in Asian populations include biomedical and clinical factors, lifestyle and behavioural influences, and socio-demographic and environmental determinants. Overall, these findings suggest that many dementia risk factors in Asian populations are modifiable. Multidimensional interventions that integrate chronic disease management, adopting a life-course approach, and supportive social and environmental strategies, tailored to regional and cultural contexts, could substantially reduce dementia incidence and promote cognitive well-being among older adults.

Keywords: Dementia; Risk factors; Elderly; Lifestyle; Asian countries

Introduction

Dementia is an umbrella term for a range of brain syndromes characterized by impairments in memory, thinking, behaviour, and daily functioning, caused by chronic or progressive brain disease (World Health Organization [WHO], 2024). It is not a single disorder but a cluster of symptoms stemming from varied neuropathology, including Alzheimer's disease, vascular dementia, and mixed etiologies. As reported by WHO (2024), dementia is one of the most significant public health challenges of the 21st century, affecting more than 55 million people with around 10 million new cases annually in the world. It is also reported as a leading cause of disability and dependency leading to higher medical, social, and economic burdens annually. More often dementia remains underdiagnosed and stigmatized, without early detection, medication and care, especially in low- and middle-income countries.

In Asia, dementia prevalence has been rising for the past few years steadily, with nearly 31.9 million people affected by 2021 (He et al., 2025; Guo et al., 2025). Metabolic factors such as high fasting plasma glucose and lifestyle-related factors such as smoking also have been identified as a leading cause, with increased fasting plasma glucose alone accounting for more than 13% dementia-related disability-adjusted life years (DALYs) in the Asian region (Sheikhi et al., 2025). Further, it was suggested that the non-modifiable risk factors such as female sex and age are significantly associated with dementia which can be delayed among nearly half of the global cases by addressing modifiable risks factors such as diabetes, hypertension, hearing impairment, low physical activity, social isolation and air pollution (Lancet Commission, 2024). Given Asia's rapidly aging populations and growing dementia burden, there is a pressing need for region-specific evidence on the most influential risk factors. This review therefore seeks to identify the foremost demographic, clinical, lifestyle, and environmental contributors to dementia among older adults in Asian countries, providing evidence to guide public health strategies tailored to the region's sociocultural and epidemiological context.

Materials and Methods

This review aimed to identify the most influential risk factors for dementia among elderly populations in Asian countries. Seven full-text, peer-reviewed primary studies, and studies used the samples of elderly people aged 60 and above were included in the study. Articles were selected from databases including PubMed Central (3), Frontiers (1), ScienceDirect (1), BioMed Central (1) and Google Scholar (1) using the key words of dementia, risk factors, elderly, lifestyle and Asian countries. Seven studies published between 2018 and 2025 were selected for the review including 04 cross-sectional, 01 comparative case-control and 02 retrospective cohort designs. Full-text peer reviewed articles written in English medium, studies employed elderly people aged 60 years and above in the study samples and studies conducted in the Asian region were considered as inclusion criteria. Review articles, studies did not participants aged 60 years and above, studies conducted outside the Asian region, studies older than 10 years and articles written in other languages except English were excluded for this review. The countries represented diverse regions of Asia, including China, India, Sri Lanka, Japan, Malaysia, and South Korea, which allowed for both cross-country comparisons and identification of regional patterns. Three themes were synthesized after performing content analysis of the data gathered from the seven studies.

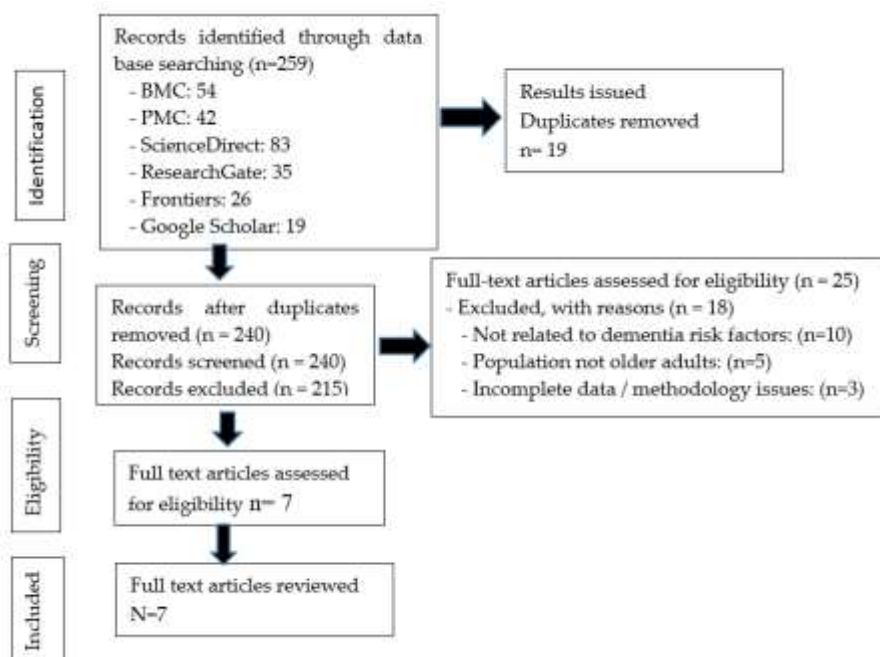


Figure 1. PRISMA Flow Chart

Results

The first study which is a cross-sectional study conducted by Wu et al. (2022), utilized data from the 6th National Health Service Survey conducted in China in 2018. The survey used a multistage stratified cluster random sampling method, with 2,713 elderly people. The aim of the study is to calculate the association of 9 possible modifiable risk factors including low social contact, low physical activity, hypertension, low education levels, hearing loss, smoking, obesity, diabetes, and lack of a spouse with dementia. The study estimated the years lived with disability (YLDs) associated with these risk factors, performing an assessment of the disability burden of dementia in the region comprehensively.

The study identified that more than 60% of dementia incidents in Jiangxi Province in China in 2018 were associated to the nine listed risk factors, with low physical activity (19.0%), low social contact (15.3%), and hearing impairments (9.3%) being the highest contributors. The total YLDs due to dementia were 61,136, among males having a higher burden than females. The study revealed that there is a significant impact of modifiable risk factors on dementia prevalence and disability in the Asian countries. To conclude the identified risk factors must be addressed by providing planned public health interventions could considerably reduce the dementia burden in Jiangxi Province in China. It is recommended to increase physical activity and promote social engagement and prevent and manage hearing loss through strategies to address the risk factors. Further, authors suggest that similar studies with different ageing profiles in other regions could provide valuable insights about strategies to prevent dementia at the national level.

The second study is a comparative institutional case-control conducted by Lalu et al. (2018) in Ernakulam, Southern India, at the geriatric outpatient department of a tertiary hospital. Fifty 65-year-old and above dementia patients were included in this study. The aim of the study is to identify modifiable risk factors and relevant preventive strategies for dementia among the elderly population. A semi-structured questionnaire was used to collect data for capturing information on lifestyle factors, demographics, social habits and comorbidities. The study identified independent risk factors associated with dementia by performing multivariate analysis.

The study identified that dementia incidents increased with age, with 40% in the ages between 65 and 74 years, 61% in the ages between 75 and 84 years, and 63.6% in those 85 years and above. Females showed a higher incidence of 55.5% compared to males with 43.5% of incidents. Individual risk factors identified included hyperlipidaemia with an Odds Ratio [OR] of 3.93, chronic obstructive pulmonary disease/bronchial asthma with an OR of 4.57, infrequent fruit consumption with an OR of 14.98, and hearing loss with an OR of 4.67. In contrast, living alone was found to be a protective factor (OR 0.029). The authors concluded that these modifiable risk factors must be addressed for the purpose of prevention and management of dementia among the elderly population. Public health interventions focusing on the management of comorbid conditions, nutrition and education are recommended to minimise dementia risk.

The third study conducted by Tamaki, Hiratsuka, and Kumakawa (2020) is a retrospective cohort study that identified dementia risk factors in Japan. The study gathered data from the records of specific health checkups from a national health screening program and compared it with records from long-term care facilities to assess cognitive function. The analysis focused on elderly people of 65 years of age and older who underwent health checkups within the last 10 years. The associations between baseline health parameters and the subsequent development of dementia were assessed by using multivariate logistic regression models.

The study identified some dementia risk factors including abdominal circumference, insulin use, and weight gain since the age of 20. Interestingly, lower abdominal circumference has a higher risk associated with developing dementia while providing a suggestion that abdominal obesity may be a positive characteristic to protect against dementia. Further, individuals who had increased more than 10 kg from 20 years of age had minimized dementia risk, showing an infrequent but complex association of body weight changes and cognitive health. The study revealed that monitoring of metabolic health indicators is

crucial in dementia prevention. The study further recommended that incorporate abdominal circumference and monitoring insulin use for routine health checkups is useful to facilitate early detection and intervention of dementia. The study suggested that further research with participants with larger sample sizes and prolonged follow-up periods is required to validate these relationships and revise preventive measures.

The next study, a national level study conducted by Nasaruddin, Ganapathy, and Tham (2025) is a cross-sectional study using data from the National Health and Morbidity Survey (NHMS) in Malaysia. The study employed 3,774 elderly people aged 60 years and above, collecting data on various health, sociodemographic and lifestyle-related factors. The Identification and Intervention for Dementia in Elderly Africans (IDDEAS) tool was used for cognitive screening of Dementia. A Univariate analysis was used for the identification of potential relationships, followed by multiple logistic regression to identify significant factors associated with dementia.

The study found multiple factors that are highly related to dementia among older Malaysians. Individuals of 70 years and older, possessing Indian ethnicity, being single, having no formal education, and those having hypertension showed higher dementia incidents. Interestingly, hypercholesterolemia was associated with lower numbers of dementia, suggesting a complex relationship that requires further investigation. This Malaysian study concluded that there are multiple sociodemographic and health-related factors that contribute to the risk of dementia in the country. The study further recommended planning and conducting relevant public health interventions focusing on education, social engagement, and management of metabolic diseases to minimise the risk of dementia. Further, the study highlighted that adopting a life-course approach to dementia prevention considering overcoming various factors is crucial.

The fifth study done by Wangbo et al. (2023) is a 12-year, population-based, retrospective cohort national study utilising data from the National Health Insurance Service (NHIS) of South Korea, between 2002 and 2017. The study aimed to investigate dementia incidence by age and year, and to estimate the PAFs for known dementia risk factors. The researchers identified individualised health education, including data about depression, metabolic diseases such as hypertension, osteoporosis, diabetes, haemorrhagic stroke, ischemic stroke and physical inactivity. Incidence rates were calculated, and PAFs for each risk factor were estimated using Levin's formula, considering the relative risks and prevalence of these factors in different groups with adjusted age and sex.

The study found that modifiable risk factors; physical inactivity, diabetes, and hypertension have a significant association with dementia incidence. Specifically, the highest PAF of 8.1% for physical inactivity followed by diabetes at 4.2%, and hypertension at 2.9% of PAF. Altogether, these significant risk factors were related to an 18.0% increase in the risk of developing dementia. The study concluded that these modifiable risk factors must be addressed for the purpose of substantially reducing the incidence of dementia in South Korea. The study further recommended implementation of public health initiatives for lifestyle modifications like increasing physical activity and proper management of metabolic and chronic diseases like hypertension and diabetes to prevent dementia.

The sixth study is an observational, cross-sectional study conducted by Lor et al. (2023) involving 4,578 elderly people aged 65 and above, selected from January 2008 to December 2018 from Taiwan's Annual Geriatric Health Examinations Program. The Short Portable Mental Status Questionnaire (SPMSQ) was used to collect data about different factors, such as chronic diseases, physiological parameters, anthropometric measurements and lifestyle and social factors. Analysis of data was performed using Multivariable logistic regression to identify the associations between these identified risk factors and cognitive impairment.

Several factors including older age and a history of diabetes mellitus were identified with significant associations with increased risk of cognitive impairment while male gender, higher high-density

lipoprotein (HDL) levels, higher albumin levels, a history of hyperlipidemia and regular exercise were identified with an association with lower risk of dementia. The study concluded that the interventions for minimizing modifiable risk factors can be planned and implemented aiming prevention of cognitive decline. Managing chronic conditions such as diabetes and hyperlipidaemia and promoting healthy lifestyles, including regular physical activity, are recommended to maintain cognitive health in older adults. The study emphasized that the early identification and management of these factors to minimise the burden of cognitive impairment in the aging population is crucial.

Table 1. *The Brief of the Selected Articles*

Authors & Year	Sample size & Country	Method	Results and findings
Wu et al. (2022)	2,713 older adults, China	Cross-sectional study using the Sixth National Health Service Survey (2018); multistage stratified cluster random sampling.	60%+ of dementia cases are attributable to 9 modifiable risk factors; top contributors: physical inactivity (19.0%), low social contact (15.3%), and hearing loss (9.3%). YLDs are estimated at 61,136, higher in males. Public health actions are needed in activity promotion, social engagement, and hearing loss management.
Lalu et al. (2018)	100 elderly participants (50 dementia patients, 50 controls), India	Comparative case-control study at a tertiary hospital geriatrics OPD; semi-structured questionnaire; multivariate analysis of demographics, comorbidities, and lifestyle.	Dementia prevalence increased with age, higher in females. Risk factors: dyslipidaemia (OR 3.93), COPD/asthma (OR 4.57), infrequent fruit intake (OR 14.98), and hearing loss (OR 4.67). Living alone is protective. Recommendations: nutrition, comorbidity management, education-based interventions.
Tamaki et al. (2020)	Older adults ≥ 65 , Japan	Retrospective cohort study linking health checkup data with clients with dementia.	Risk factors: low abdominal circumference, insulin use, and absence of weight gain since age 20. Findings suggest abdominal obesity may be protective. Recommendations: include waist circumference & insulin monitoring in health checkups; early preventive interventions needed.
Nasarudin et al. (2025)	3,774 older adults ≥ 60 , Malaysia	Cross-sectional analysis of the National Health and Morbidity Survey; cognitive screening.	Dementia risk is higher in those ≥ 70 , of Indian ethnicity, single, with low/no education, and hypertensive. Hypercholesterolemia protective. Recommendations: multifactorial interventions (education, social engagement, chronic disease management), life-course approach to dementia prevention.
Hwangbo et al. (2023)	National cohort, South Korea (12-year follow-up)	A Nationwide Retrospective cohort study utilised Health Insurance Service data to examine incidence & population attributable fraction (PAF) of dementia risk factors.	Significant risk factors: physical inactivity (PAF 8.1%), diabetes (4.2%), and hypertension (2.9%). Combined impact: 18% increased dementia risk. Recommendations: promote physical activity, diabetes and hypertension management through national health policies.
Lor et al. (2023)	4,578 adults ≥ 65 , Taiwan	An observational, cross-sectional study utilised data from the Annual Geriatric Health Examinations Programme over 10 years for cognitive assessment.	Older age, diabetes mellitus. Protective factors: male gender, hyperlipidaemia, regular exercise, high albumin, and HDL were identified as risk factors. Lifestyle modifications, early management of chronic disease, and targeted strategies for cognitive health preservation are recommended.
Gamage et al. (2019)	150 elderly (≥ 60), Sri Lanka	Descriptive cross-sectional study in 5 care facilities; structured interviews + medical records.	Age is negatively associated with cognition; education is protective; poor physical health & chronic conditions are linked to lower cognition. Recommendations: cognitive stimulation, educational & health promotion programs, enriched environments, and individualized care plans in residential facilities.

In the seventh study, Gamage, Hewage, and Pathirana (2019) examined factors associated with cognitive function among physically independent elderly residents in a descriptive cross-sectional study conducted in care facilities in Sri Lanka. The study employed 150 elderly care home residents aged 60 and above living in five care facilities in the Western Province. People who severely deteriorated cognitively and physically were not included in the study. Data were gathered using structured interviews from records relevant to medical condition, demographic characteristics, educational attainment, physical health, social engagement, and environmental factors. Multiple linear regression analysis along with Mini-Mental State Examination (MMSE) was used to evaluate cognitive function to identify significant evidence of cognitive performance among the people in the residential care facilities.

The study identified a strong relationship between age and cognitive performance, among older participants showed lower Mini-Mental State Examination (MMSE) scores. It was identified that higher educational levels have a positive relationship with increased cognitive function. Decreased Physical health, physical activity, and the presence of chronic illnesses have negative relations with cognitive outcomes. The study concluded that cognitive ability among older adults living in care homes are shaped by education, demographic factors, and health-related factors collectively. Planned interventions including strategies to promote physical health, structured educational activities, cognitive stimulation programs, and environmental adjustments must be implemented addressing the challenges aiming at cognitive well-being. Individual care planning, and systematic monitoring of cognitive status are recommended to improve the overall quality of life for elderly residents. After analysing the result from each study, three themes; biomedical and clinical factors, lifestyle and behavioural influences, and socio-demographic and environmental determinants were synthesized.

Theme 1: Biomedical and Clinical Factors

Biomedical and clinical factors were identified as significant factors that increase dementia risk among elderly populations. Study identified that diabetes and has significant relationship with cognitive decline in China (Wu et al., 2022) while hyperlipidaemia caused increased risk factors in Indian cohorts, (Lalu et al., 2018). Tamaki et al., (2020) found that obesity and increased abdominal circumference had relationship with diminished cognitive function In Japan, reflecting the influence of body composition on brain health. Hearing loss was found to be a significant risk factor for dementia in South Korea, revealing the negative effect of deterioration of sensory functions on cognitive function among elderly people (Hwangbo et al., 2023). Controversial, illogical and complex protective effects of some risk factors, such as hyperlipidaemia in Malaysian populations (Lor et al., 2023) and larger abdominal circumference in Japan (Tamaki et al., 2020) were also identified. In Taiwan, (Nasaruddin et al., 2025) found that the management of hyperglycaemia is crucial as the use of insulin was having a positive association between increasing dementia risk. Accompanying these research findings from the Asian region, the Sri Lankan study conducted by (Gamage et al., 2019) revealed that the risk of dementia has a positive relationship with obesity and associated metabolic changes. Overall, these studies reveal that biomedical and clinical risk factors are modifiable factors that affect on dementia differently in individual countries where actionable and modifiable risk factors must be addressed by performing preventive interventions.

Theme 2: Lifestyle and Behavioural Factors

According to (Lalu et al., 2018; Wu et al., 2022), Lifestyle and behavioural factors among older adults have consistently been identified having relationships with their cognitive health. poor dietary habits, use of nicotinic products like cigarettes smoking, and lack of Physical activity were having positive associations with higher dementia risk in both countries China and India. There are positive relationships between balanced nutrition, regular exercise protective, higher nutritional conditions such as optimum HDL cholesterol and albumin level and positive cognitive functions (Lor et al., 2023; Hwangbo et al., 2023). Wu et al., (2022) and Tamaki et al. (2020) emphasize that lifestyle modification are crucial preventive health strategies that can minimize dementia risk. Further, (Lor et al., 2023; Hwangbo et al., 2023) highlighted that community health programmes such as physical exercise and nutritional counselling programmes as

strategies to promote cognitive functions among elderly populations. According to Nasaruddin et al. (2025), adopting a life-course approach to dementia prevention considering overcoming various factors is crucial. Healthy lifestyle practices starting from early life are more beneficial instead of starting measures in old age (Tamaki et al., 2020; Nasaruddin et al., 2025). As Gamage et al. (2019) highlighted, promotion of healthy behaviours minimises dementia risk and further improves physical health and psychological well-being among Sri Lankan elderly population.

Theme 3: Socio-demographic and Environmental Factors

Dementia risk factors include environmental and socio-demographic conditions were shown has a strong relationship with dementia risk and cognitive functions. Female gender and increased age were identified as significant risk factors of cognitive impairment among Chinese populations (Wu et al., 2022). Lower educational levels and being a single person increased risks while higher education level provided preventive effects of dementia risk (Lalu et al., 2018; Nasaruddin et al., 2025). Gamage et al., (2019) found that the limited social activities are significantly associated with higher risk of dementia, whereas active engagement in social activities caused better cognitive functions. Within care homes, environmental factors such as health promotion activities, cognitive stimulation programs and environmental modification were enhanced cognitive functions among elderly people (Gamage et al., 2019) while both social determinants and living environments shape cognitive functions (Hwangbo et al., 2023; Lor et al., 2023).

Implementation of culturally based programmes, increasing education, increasing social engagement, and providing supportive living environments were important to minimise dementia risk and promote cognitive functions (Lalu et al., 2018; Nasaruddin et al., 2025). Overall, collectively socio-demographic, biomedical and behavioural risk factors must be modified highlighting the importance of applying multidimensional strategies to minimise and prevent dementia among Asian populations (Tamaki et al., 2020; Wu et al., 2022).

Discussion and Conclusion

The collective evidence from the reviewed studies demonstrates that dementia in Asian populations arises from a combination of biomedical, lifestyle, and socio-environmental determinants, emphasising the cognitive decline among older adults. Biomedical and clinical risk factors such as hypertension, diabetes, dyslipidaemia, hearing loss, and obesity consistently emerged as major contributors to dementia prevalence and progression (Wu et al., 2022; Lalu et al., 2018; Tamaki et al., 2020; Hwangbo et al., 2023; Lor et al., 2023; Nasaruddin et al., 2025). The findings align with global estimates from the Lancet Commission on Dementia Prevention, Intervention, and Care which indicate that around 40% of dementia cases are attributable to modifiable clinical risk factors, particularly hypertension, hearing loss, and diabetes (Livingston et al., 2020). Regional evidence, however, reveals that some common metabolic indicators influence cognitive outcomes. For instance, hyperlipidaemia and abdominal obesity appeared paradoxically protective in Malaysian and Japanese cohorts, highlighting the need to interpret metabolic markers within cultural and biological contexts (Tamaki et al., 2020; Nasaruddin et al., 2025). The inclusion of studies across China, India, Japan, Korea, Taiwan, Malaysia, and Sri Lanka provides strong regional insight, collectively reinforcing that early management of cardiometabolic and sensory health through population screening, pharmacologic control, and health education remains a crucial preventive strategy for reducing dementia burden in rapidly aging Asian societies.

Lifestyle and behavioural determinants emerged as equally critical domains influencing cognitive health, with physical inactivity, poor diet, smoking, and limited social interaction consistently linked to heightened dementia risk (Wu et al., 2022; Lalu et al., 2018; Hwangbo et al., 2023). Conversely, regular exercise, higher fruit and protein intake, and adequate nutritional biomarkers such as albumin and HDL levels were protective (Lor et al., 2023; Tamaki et al., 2020). These findings mirror the evidence synthesized by Nguyen et al. (2021) in a Southeast Asian meta-analysis, which concluded that low physical activity and poor

nutrition increase dementia prevalence across the region's elderly populations. The convergence of these findings highlights the critical role of modifiable lifestyle choices as cost-effective targets for large-scale prevention programs. Sustained behavioural interventions such as structured community exercise, nutritional education, and culturally tailored public health messaging can cumulatively build cognitive resilience throughout the lifespan (Livingston et al., 2020; WHO, 2024). Importantly, these studies advocate adopting a lifestyle perspective, where early adulthood behaviours and mid-life health management determine late-life cognitive outcomes. This underscores the necessity for regional governments and health systems to incorporate dementia prevention into chronic disease management frameworks and national noncommunicable disease (NCD) strategies.

Socio-demographic and environmental dimensions further amplify the complexity of dementia etiology in Asian contexts. Advanced age, female gender, low educational attainment, and limited social engagement repeatedly appeared as risk-enhancing factors (Wu et al., 2022; Lalu et al., 2018; Nasaruddin et al., 2025; Gamage et al., 2019). These findings substantiate the argument that cognitive health is inseparable from the broader social and cultural environment. Evidence from Livingston et al. (2020) emphasizes education and social participation as key protective levers, suggesting that enhancing cognitive reserve through lifelong learning and community integration can minimise neuropathological decline. Studies conducted in institutional and community settings, such as those by Gamage et al. (2019) in Sri Lanka, further illustrate that enriched care environments, social activities, and individualized cognitive stimulation improve cognitive outcomes among older adults. The integration of environmental and social factors into public health planning through age-friendly infrastructure, caregiver support, and policy related initiatives could therefore bridge biomedical and behavioural domains, ensuring holistic dementia prevention. Overall, the synthesis across seven Asian studies and two global references reinforces a multidimensional framework where biological, behavioural, and social factors intersect dynamically, demanding comprehensive and culturally sensitive strategies to mitigate the escalating dementia burden in aging Asian populations.

In conclusion, the collective findings from the reviewed studies underscore that dementia in Asian populations is strongly influenced by modifiable factors such as physical inactivity, cardiometabolic diseases, poor nutrition, and limited social engagement, all compounded by demographic and educational disparities. These determinants highlight the critical need for early, multifaceted, and context-specific interventions. It is recommended that National health systems integrate dementia prevention into broader chronic disease management frameworks, adopting a life-course approach that promotes community-based exercise programs, cognitive stimulation, and social inclusion initiatives. Policies should also prioritize equitable access to education, hearing care, and nutritional support, particularly for vulnerable and low-income older adults. Furthermore, strengthening longitudinal surveillance and regionally tailored research will be essential to inform adaptive strategies that can effectively mitigate dementia risk and promote healthy cognitive aging across diverse Asian contexts.

References

- Gamage, M. W. K., Hewage, C., & Pathirana, K. D. (2019). Associated factors for cognition of physically independent elderly people living in residential care facilities for the aged in Sri Lanka. *BMC Psychiatry*, 19, 10. <https://doi.org/10.1186/s12888-018-2003-5>
- Guo, P., He, X., Zhang, Y., & Yu, C. (2025). Trends and projections of Alzheimer's disease and other dementias in Asia, 1990–2036. *Frontiers in Public Health*, 13, 1583339. <https://doi.org/10.3389/fpubh.2025.1583339>
- Hwangbo, S., Lee, S. H., Han, S. H., Chun, H., Jang, H., Seo, S. W., Na, D. L., Won, C. W., Kim, J. H., & Lim, J. Y. (2023). Dementia incidence and population-attributable fraction for dementia risk factors in Republic of Korea: A 12-year longitudinal follow-up study of a national cohort. *Frontiers in Aging Neuroscience*, 15, 1126587. <https://doi.org/10.3389/fnagi.2023.1126587>
- Lalu, J. S., Vijayakumar, P., George, S., Nair, A. V., & B., A. (2018). Risk factors of dementia: A comparative study among the geriatric age group in Ernakulam, Southern India. *International Journal of*

- Community Medicine and Public Health*, 5(2), 544–549. <https://doi.org/10.18203/2394-6040.ijcmph20180117>
- Lancet Commission. (2024). Dementia prevention, intervention, and care: 2024 report of the Lancet Commission. *The Lancet Public Health*, 9(7), e561–e600. [https://doi.org/10.1016/S2468-2667\(24\)00115-3](https://doi.org/10.1016/S2468-2667(24)00115-3)
- 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)
- Lor, Y. C. M., Tsou, M. T., Tsai, L. W., & Tsai, S. Y. (2023). The factors associated with cognitive function among community-dwelling older adults in Taiwan. *BMC Geriatrics*, 23, 116. <https://doi.org/10.1186/s12877-023-03806-4>
- Nasaruddin, N. H., Ganapathy, S. S., & Tham, S. W. (2025). Factors associated with dementia among older people in Malaysia: Findings from the National Health and Morbidity Survey. *Australasian Journal on Ageing*, 44(1), e13392. <https://doi.org/10.1111/ajag.13392>
- Nasaruddin, N. H., Kamaruzzaman, S. B., Hairi, F., Aziz, N. A., & Abdul Aziz, A. F. (2024). Factors associated with dementia among older people in Malaysia: Findings from a national survey. *BMC Public Health*, 24, 19272. <https://doi.org/10.1186/s12889-024-19272-7>
- Nguyen, T. T., Nguyen, T. X., Nguyen, A. T., Nguyen, H. T. T., Nguyen, H. C., Vu, H. T. T., ... & Nguyen, H. T. T. (2021). Prevalence and risk factors of dementia among older adults in Southeast Asia: A systematic review and meta-analysis. *BMC Geriatrics*, 21(1), 514. <https://doi.org/10.1186/s12877-021-02535-9>
- Sheikhi, K., Momenabadi, V., Khosravi, S., et al. (2025). Burden of risk factors attributable to Alzheimer's disease and other dementia and its relationship with the Socio-Demographic Index in Asia. *BMC Neurology*, 25, 247. <https://doi.org/10.1186/s12883-025-04265-7>
- Tamaki, Y., Hiratsuka, Y., & Kumakawa, T. (2020). Risk factors for dementia incidence based on previous results of the specific health checkups in Japan. *Healthcare*, 8(4), 491. <https://doi.org/10.3390/healthcare8040491>
- Tamaki, Y., Sakurai, R., Fujiwara, Y., & Shinkai, S. (2020). Risk factors for dementia incidence: Evidence from Japanese longitudinal studies. *BMC Geriatrics*, 20, 1649. <https://doi.org/10.1186/s12877-020-01649-1>
- World Health Organization. (2024). *Dementia*. WHO Health Topics. <https://www.who.int/health-topics/dementia>
- Wu, Y., Zheng, H., Xu, F., & Zhang, Y. (2022). Population attributable fractions for risk factors and disability burden of dementia in Jiangxi Province, China: A cross-sectional study. *BMC Geriatrics*, 22, 811. <https://doi.org/10.1186/s12877-022-03507-4>