

Financial Impact of Dementia Care on Thai Households: A Multi-Center Study of Informal Care Costs and Contributing Factors

Juthamas Prawjaeng¹, Weerasak Muangpaisan², Pattara Leelahavarong¹, Khanit Pisawong¹, Papan Thaipisuttikul³, Yuttachai Likitjaroen⁴, Pongsatorn Paholpak⁵, Panita Limpawattana⁶, Thammanard Charernboon⁷, Pornpatr Dharmasaroja⁸, Varalak Srinonprasert^{1,9}

¹Siriraj Health Policy Unit, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkoknoi, Bangkok, Thailand
²Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand
³Department of Psychiatry, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand
⁴Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
⁵Department Psychiatry, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand
⁶Internal Medicine Department, Faculty of Medicine, Khon Kaen University, Friendship highway road, Muang, Khon Kaen 40002, Thailand
⁷Department of Psychiatry, Faculty of Medicine, Thammasat University, Pathumthani, Thailand
⁸Department of Clinical Epidemiology, Faculty of Medicine, Thammasat University, Pathumthani, Thailand
⁹Division of Geriatric Medicine, Department of Medicine, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

INTRODUCTION

- Dementia imposes a growing burden as Thailand transitions into an aged society.
- Formal care resources (specialist services, long-term care facilities) remain limited and unevenly distributed.
- Families are the main providers of dementia care, often bearing significant out-of-pocket (OOP) and direct non-medical (DNM) costs.
- Informal care, unpaid care provided by family members, is particularly substantial, but its economic impact has been underexplored in Thailand.
- This study aims to estimate DNM and OOP costs of dementia care and identify key cost drivers from a societal perspective.

OBJECTIVE

To estimate direct non-medical (DNM) and out-of-pocket (OOP) costs of dementia care in Thailand and identify key cost drivers from a societal perspective.

METHODOLOGY

- A multicenter cross-sectional study was conducted in 2024 among 289 individuals with dementia or mild cognitive impairment (MCI) and their primary caregivers at five tertiary hospitals.
- DNM costs included informal care (valued using the human capital approach), paid caregiving, and other non-medical expenses. OOP costs covered direct medical payments. Health-related quality of life (HRQoL) was assessed using proxy-reported EQ-5D-5L.
- Costs were compared by severity level, and generalized linear models (gamma distribution, log link) were used to identify predictors of total annual costs (DNM+OOP). All costs are reported in 2025 USD (1 USD = 32.58 THB).

RESULTS

Most patients were female (73%), with a mean age of 78.4 years (SD 8.61); severe dementia patients were oldest (80.4 years), while MCI patients were youngest (74.7 years). Alzheimer's disease (AD) was the most common diagnosis: 65% of MCI due to AD and 63–78% of dementia cases.

Cost categories (Mean USD per patient per year)	MCI (n=74)	Mild dementia (n=85)	Moderate dementia (n=79)	Severe dementia (n=51)
Direct medical costs				
Out-of-pocket	116	480	203	335
Direct non-medical (DNM) costs				
IPD and OPD-related DNM	289	332	333	245
Informal care	7,829	19,483	19,788	17,788
Paid care	644	1,183	1,392	4,104
Facility buying and home renovation	153	281	456	1,095
Other costs	227	533	811	1,748
Total DNM	9,141	21,812	22,779	24,981
Grand Total	9,257	22,292	22,982	25,316

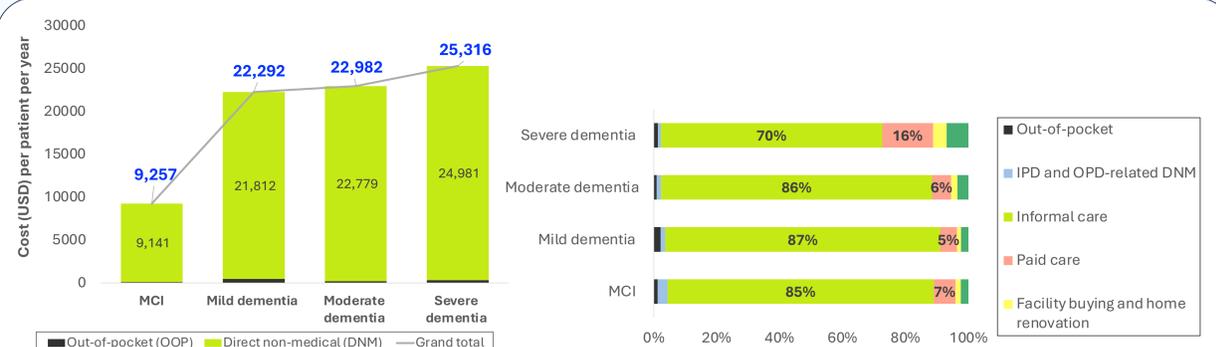


Figure 1. Annual OOP and DNM costs across dementia severity levels

Figure 2. Breakdown of DNM cost components by severity of dementia

Total annual costs (DNM + OOP) ranged from \$ 9,257 (SD: \$10,641) in MCI to \$25,316 (SD: \$15,857) in severe dementia.

Informal care was the largest cost component, accounting for 70%–87% of the total, rising from \$7,829 to \$19,788, but slightly declining to \$17,788 in severe cases due to increased paid caregiving.

Key Cost Drivers

- GLM analysis showed that patients with mild and moderate dementia had significantly higher total costs compared with those with MCI ($\exp(\beta) = 1.19$, $p = 0.02$ for both groups).
- Although the severe group had higher mean costs, the difference was not statistically significant ($\exp(\beta) = 1.14$, $p = 0.13$), possibly due to the greater variability in cost within this group.
- Higher caregiver age, the use of paid care, and the days of informal care were also significant cost drivers ($\exp(\beta) = 1.01$, 1.59 and 1.00 , $p < 0.05$).

- In contrast, higher patient utility scores (proxy-reported) were associated with lower total costs ($\exp(\beta) = 0.86$, $p = 0.08$), although the association was not statistically significant.
- Other variables, including comorbidity index, caregiver education, and insurance type, showed no significant association with total costs.

DISCUSSION

- This study supports international evidence that informal care is the major cost driver in dementia, accounting for 40–90% of total costs across countries¹⁻³.
- In Thailand, however, Kongpakwattana et al. (2019)⁴ reported direct medical costs as the largest component. This difference may reflect methodological variations in estimating indirect costs, particularly the use of the annual national wage instead of the hourly GNI-adjusted wage recommended by the Thai HTA guidelines. Such an approach may have led to a conservative estimate of informal care costs, even though the duration of care was comparable to that reported in international studies.

CONCLUSION

- Dementia care imposes a substantial financial burden on Thai households. Although total costs tended to increase with dementia severity, caregiving-related factors such as paid caregiver use, care duration, and caregiver age remained the stronger cost drivers.
- These findings underscore the need for a national dementia policy that prioritizes early detection, community-based care, and structured caregiver support to delay disease progression and reduce household costs as Thailand moves toward an aged society.

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