

## A Real-World Evidence Analysis of Associations between Costs, Quality of Life and Disease-Severity Indicators of Alzheimer's Disease in Thailand

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**Abstract :** Background: Although an increase in the burden of Alzheimer's disease (AD) is evident worldwide, knowledge of costs and health-related quality of life (HR-QoL) associated with AD in Low- and Middle-Income Countries (LMICs) is still lacking. We, therefore, aimed to collect real-world cost and HR-QoL data, and investigate their associations with multiple disease-severity indicators among AD patients in Thailand. Methods: We recruited AD patients aged  $\geq 60$  years accompanied by their caregivers at a university-affiliated tertiary hospital. A one-time structured interview was conducted to collect disease-severity indicators, HR-QoL and caregiving information using standardized tools. The hospital's database was used to retrieve healthcare resource utilization occurred over 6 months preceding the interview date. Costs were annualized and stratified based on cognitive status. Generalized linear models were employed to evaluate determinants of costs and HR-QoL. Results: Among 148 community-dwelling patients, average annual total societal costs of AD care were 8,014 US\$ [95% Confidence Interval (95% CI): 7,295 US\$ - 8,844 US\$] per patient. Total costs of patients with severe stage (9,860 US\$; 95% CI: 8,785 US\$ - 11,328 US\$) were almost twice as high as those of mild stage (5,524 US\$; 95% CI: 4,649 US\$ - 6,593 US\$). The major cost driver was direct medical costs, particularly those incurred by AD prescriptions. Functional status was the strongest determinant for both total costs and patient's HR-QoL (p-value  $< 0.001$ ). Conclusions: Our real-world findings suggest the distinct major cost driver which results from expensive AD treatment, emphasizing the demand for country-specific cost evidence. Increases in cognitive and functional status are significantly associated with decreases in total costs of AD care and improvement on patient's HR-QoL.

**Keywords :** Alzheimer's disease, associations, costs, disease-severity indicators, health-related quality of life

**Conference Title :** ICHE 2019 : International Conference on Health Economics

**Conference Location :** London, United Kingdom

**Conference Dates :** June 27-28, 2019