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Assessing the health-related quality of life and socioeconomic burden of dry eye disease in Thailand: A multicenter study on patient-reported outcomes

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INTRODUCTION

- **Dry eye disease (DED) impairs** visual-related activities, leading to reduced mobility and distress in daily life, particularly among older individuals who receive delayed treatment[1].
- Clinical evidence demonstrates a high DED prevalence in Thailand, with **34% of patients** visiting ophthalmology clinics for eye examinations showing visual abnormalities, indicating that DED is recognized as a significant condition among patients living with eye disease in Thailand [2].

OBJECTIVE

- This cross-sectional study evaluates the impact of DED severity on direct non-medical **(**DNM**)** care costs and health-related quality of life (HRQoL)

METHODS

- The study was conducted at six tertiary-care centers between September 2024 and March 2025. Visual-related severity was assessed using the validated Ocular Surface Disease Index (OSDI) into 3 categories: (i) calculated OSDI score of mild DED is above 13 but not greater than 22 scores (ii) calculated OSDI score of moderate DED is above 23 but not greater than 32 scores and (iii) calculated OSDI score of severe DED is above 32 scores. [3]
- HRQoL was measured using the EQ-5D-5L with the Thai value set [4]. DNM costs were estimated using the human capital approach.
- Descriptive statistics were used, and the association between DED severity and HRQoL was analyzed using the Mann-Whitney U test ($p < 0.05$**).**

RESULTS

- A total of 161 patients with DED were enrolled, 81.37% of whom were female. Participants were classified into two severity subgroups: (i) mild to moderate DED (33.96%) and (ii) severe DED (66.04%). The mean age of the total population was 60.47 ± 15.18.
- However, DNM costs were significantly 2.04 times higher in severe DED compared to mild-to-moderate DED (p=0.025) [Figure 1 and Table 1]
- Utility scores differed significantly between the mild-to-moderate DED (0.872; 95% CI: 0.843–0.928) and severe groups (0.787; 95% CI: 0.778–0.861; $p < 0.005$) [Figure 2 and Table 2].

Table 1 Direct non-medical cost among DED patients (in USD; SD)

OSDI Severity	Transportation	Incremental food	Accommodation	Paid care	Other cost	Total OPD direct non-medical cost
Mild-to-moderate DED	9.47	4.38	0.57	5.25	0.34	20.01
Severe DED	18.83	4.49	0.00	8.41	9.04	40.78
Total population	15.69	4.46	0.19	7.35	6.13	33.81

Table 2 EQ-5D-5L and EQ-VAS values among OSDI severity

OSDI severity	EQ-5D-5L	EQ-VAS
Mild-to-moderate DED (n=53)	0.87 (0.14)	79.22 (14.41)
Severe DED (n=105)	0.79 (0.16)	70.63 (17.30)
Total population (n=158)	0.82 (0.16)	73.57 (16.82)

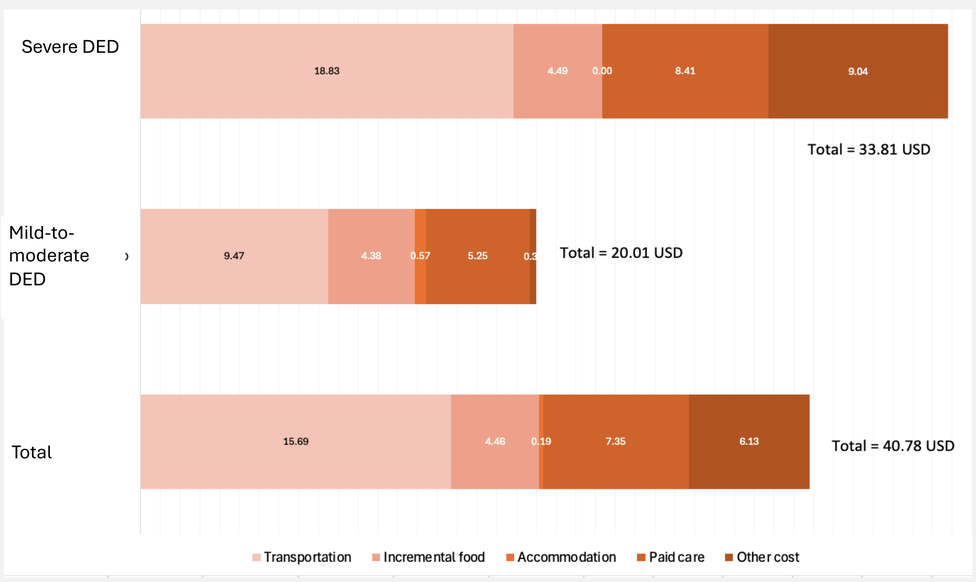

Figure 1 Out-patient direct non-medical cost by component (USD)

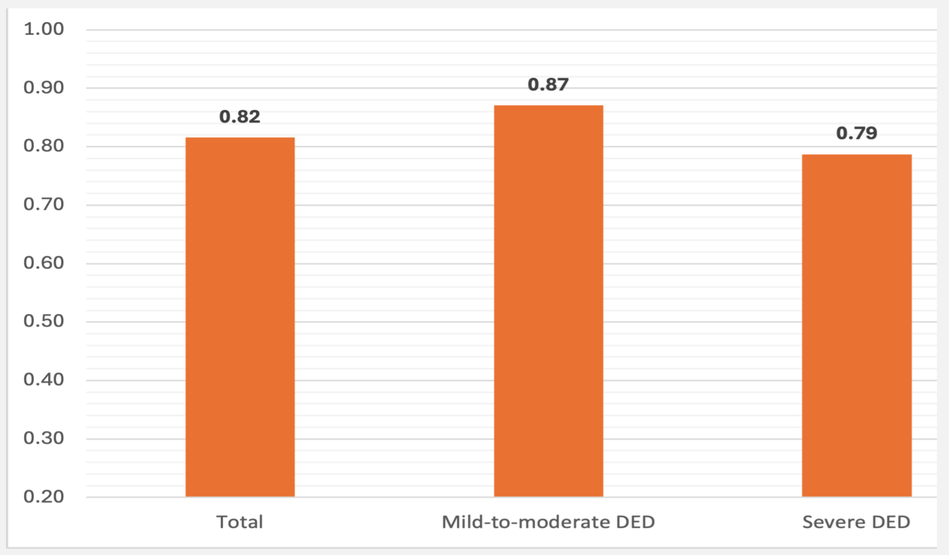

Figure 2 The HRQoL among DED patients measuring by EQ-5D-5L

CONCLUSIONS

These findings support the objectives of Thailand's national healthy aging policy by highlighting the unmet needs of older adults living with DED.

To reduce the long-term economic and quality-of-life burden, we recommend that policymakers consider incorporating essential DED diagnostics and treatments into the national health benefit package. Prioritizing coverage for high-severity cases could enhance access, reduce out-of-pocket spending, and prevent functional decline, especially among the aging population.

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