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The hidden burden of cancer inequalities: socioeconomic differences in symptom burden and quality of life among patients with metastatic cancer

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Background

- Reducing cancer inequalities is a key priority of Europe's Beating Cancer Plan .
- Patients with metastatic cancer experience high symptom burden and impaired health-related quality of life (HRQoL).
- Evidence on disparities in symptom burden and HRQoL by socioeconomic position (SEP) remains limited.

Aim: To assess socioeconomic disparities in symptom burden and HRQoL over time in patients with stage IV cancer.

Methods

Pooled data from **two prospective cohort studies** (eQuiPe & SYMPRO-Lung) in adult patients with stage IV cancer

EORTC QLQ-C30 every 3 months
Functioning scales and symptom scales

Education: low, middle, high

Income: low (<€24,300), middle (€24,300–31,000), high (>€31,000)

Linear mixed models adjusting for age, sex, comorbidities, and tumor type

Key messages

Persistent inequalities in symptom burden and HRQoL by educational attainment highlight the need for support beyond healthcare access, including health-literacy-sensitive communication, accessible symptom monitoring, and timely integration of palliative care.

Results

Patient characteristics (n=834)

45% female

mean age 65 years (SD 9.9)

32% low, 38% middle, 30% high

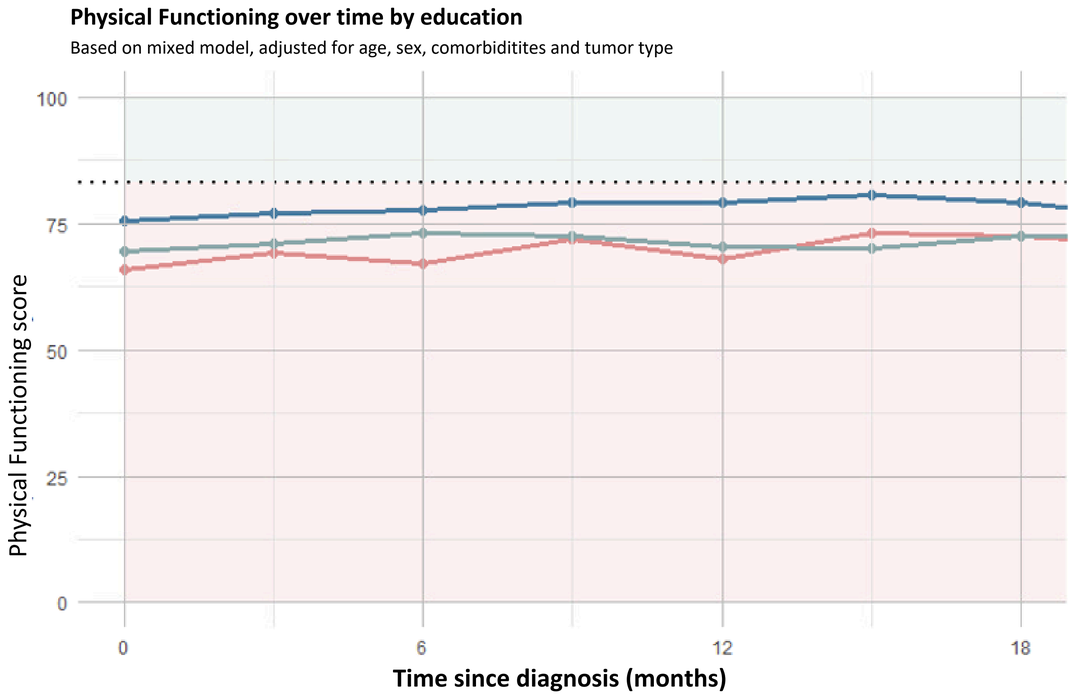
21% low, 41% middle, 38% high

Lower SEP was associated with worse symptom burden and functioning at the time of stage IV diagnosis (Table 1). These differences remained stable over time, with no significant SEP × time interactions (Figure 1).

Table 1. Differences in symptom burden and HRQoL at baseline (stage IV diagnosis) between SEP groups.

	Education (low education = reference group)		**Income (low income = reference group)**	
Functioning scale	Middle	High	Middle	High
Physical functioning	1.7 [-2.5;5.8]	**7.0* [2.6;11.4]**	0.4 [-4.5;5.3]	1.8 [-3.3;6.9]
Emotional functioning	2.8 [-0.9;6.5]	**5.4* [1.5;9.2]**	1.4 [-2.9;5.8]	0.2 [-4.4;4.8]
Symptoms				
Nausea	**-3.9* [-6.7;-1.1]**	**-4.6* [-7.6;-1.7]**	-2.4 [-5.7;0.8]	-2.0 [-5.4;1.4]
Pain	-1.5 [-6.5;3.6]	**-5.7* [-11.0;-0.5]**	-3.4 [-9.3;2.6]	-4.9 [-11.0;1.3]
Dyspnea	-4.3 [-9.1;0.4]	**-5.1* [-10.0;-0.2]**	-3.2[-8.8;2.3]	-2.1 [-7.9;3.7]
Constipation	-1.3 [-5.2;2.6]	-1.8 [-6.0;2.3]	**-6.4*[-10.9;-1.9]**	**-8.2* [-12.8;-3.5]**

Data are presented as β values. For functioning scales, positive β values indicate better functioning; for symptom scales negative β values indicate lower symptom burden. *p < 0.05; all statistically significant differences were clinically relevant.



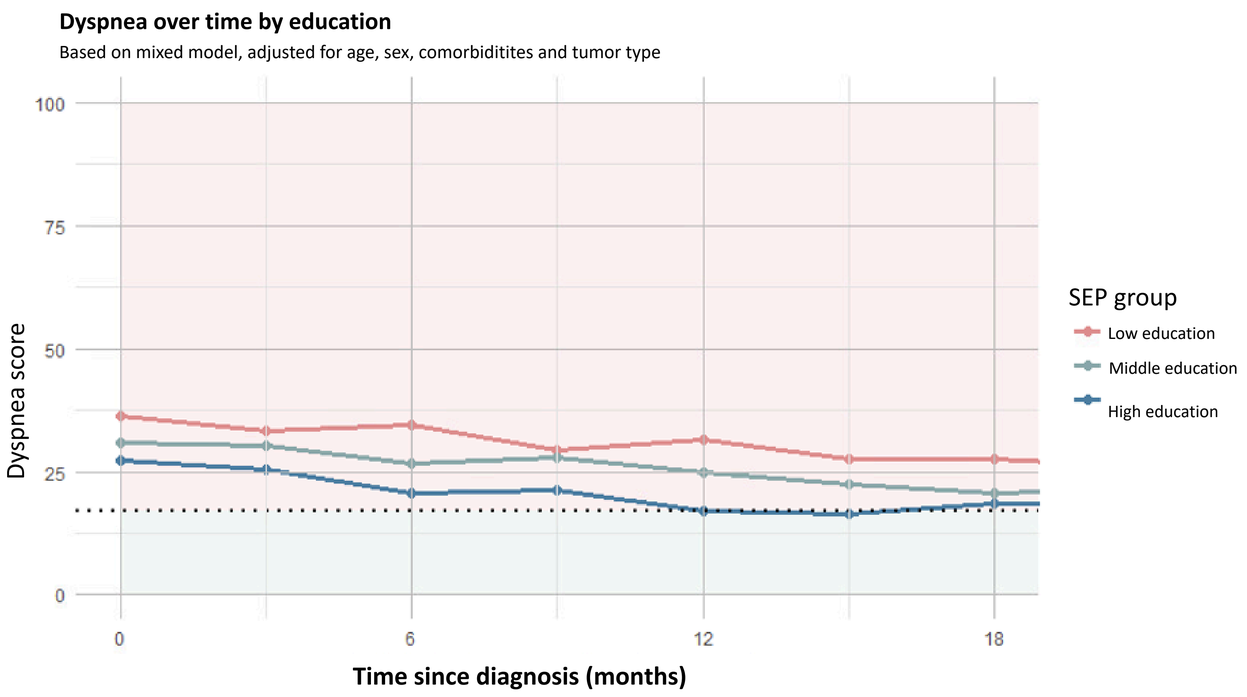


Figure 1. Higher scores indicate better functioning (functioning scales) and greater symptom burden (symptom scales). Lines show predicted values from the linear mixed model, adjusted for age, sex, comorbidity, and tumor type. The horizontal dotted lines indicate the EORTC threshold for clinically important impairment.



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