

Depressive symptoms, socioeconomic position and mortality in older people with cancer

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Depression and cancer





50%

Mehnert, A., Hartung, T. J., Friedrich, M., Vehling, S., Brähler, E., Härter, M., Keller, M., Schulz, H., Wegscheider, K., Weis, J., Koch, U., & Faller, H. (2018). One in two cancer patients is significantly distressed: Prevalence and indicators of distress. *Psycho-oncology*, 27(1), 75–82. https://doi.org/10.1002/pon.4464



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Socioeconomic position (SEP)



Kogevinas M, Marmot MG, Fox AJ, Goldblatt PO. Socioeconomic differences in cancer survival. J Epidemiol Community Health. 1991;45(3):216-9.

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Aims

1. To examine the associations between depressive symptoms and both cancer and all-cause mortality in people affected by cancer, adjusting for multiple confounders.

2. To examine whether SEP moderates the associations of depressive symptoms with cancer and all-cause mortality.





Methods

Dataset



Participants

People diagnosed with cancer who had a measure of depressive symptoms within 4 years after diagnosis (Trudel-Fitzgerald et al., 2020)

Depressive symptoms



Centre for Epidemiologic **Studies Depression Scale** (CESD-8) (Turvey et al., 1999)





Total non-pension household wealth

Cancer and mortality data



Covariates





Analysis

- Multiple imputation
- Cox proportional hazards regression **STATA**



- Competing risk regression
- Sensitivity analyses

Turvey, C. L., Wallace, R. B., & Herzog, R. (1999). A revised CES-D measure of depressive symptoms and a DSM-based measure of major depressive episodes in the elderly. Int Psychogeriatr, 11(2), 139-148. doi:10.1017/s1041610299005694; Trudel-Fitzgerald, C., Tworoger, S. S., Zhang, X., Giovannucci, E. L., Meyerhardt, J. A., & Kubzansky, L. D. (2020). Anxiety, Depression, and Colorectal Cancer Survival: Results from Two Prospective Cohorts. Journal of Clinical Medicine, 9(10), 3174. Retrieved from https://www.mdpi.com/2077-0383/9/10/3174

Participants

N = 1352 596 died (44.1%) 335 died from cancer (24.5%)

Mean follow up: 7.3 years (range: 0-16 years)

Mean age: 69.6 years 51.5% male

26.1% reported elevated depressive symptoms



Results – all-cause mortality

No interactions with SEP

Follow-up	Model	HR (95% CI)	P value
<4 years		N deaths/N total = 314/1352	
	Model 1	2.35 (1.87-2.95)	<0.001***
	Model 2	1.93 (1.52-2.45)	<0.001***
4-8 years		N deaths/N total = 154/919	
	Model 1	1.74 (1.23-2.46)	0.002**
	Model 2	1.48 (1.02-2.13)	0.037*
≥8 years		N deaths/N total = 128/509	
	Model 1	1.12 (0.72-1.74)	0.621
	Model 2	1.07 (0.67-1.70)	0.777

Model 1 adjusted for age and sex.

Model 2 adjusted for age, sex, ethnicity, marital status, wealth, number of comorbidities, alcohol-related cancer type (yes/no), smoking-related cancer type (yes/no), age at cancer diagnosis, time between cancer diagnosis and depressive symptoms assessment, and antidepressant medication (yes/no).

No interactions with SEP

Results – cancer mortality



SHR = subdistribution hazard ratio

Model 1 adjusted for age and sex.

Model 2 adjusted for age, sex, ethnicity, marital status, wealth, number of comorbidities, alcohol-related cancer type (yes/no), smoking-related cancer type (yes/no), age at cancer diagnosis, time between cancer diagnosis and depressive symptoms assessment, and antidepressant medication (yes/no).



Conclusions

- High depressive symptoms are associated with increased risk for all-cause mortality in people diagnosed with cancer when the follow-up is <8 years
- Stronger association when follow-up is **shorter** (<4 years vs 4-8 years)
- Association between depressive symptoms and cancer mortality might be due to reverse causality
- SEP does not moderate associations between depressive symptoms and mortality in people diagnosed with cancer



Implications

- It is crucial to screen for and effectively treat depression following a cancer diagnosis
- Particularly in the early phases of diagnosis

→Future work: what are the underlying mechanisms?

- Strengths: many confounders, competing risk regression, long follow-up, data linkage, multiple imputation
- Limitations: could not adjust for measures of cancer severity, CESD is not cancerspecific, combining different cancer types



Thank you for listening!

Any questions?

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