

Disparate trends in Place of death for people with different cancer types: a national population–based study

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Introduction

This study investigated the impact of a national palliative care policy introduced in 2013. The hypothesis was that end-of-life and palliative care policy shape healthcare services, which in turn influence service utilization and ultimately place of death for people dying from cancer.

Study aim

The aim was to identify longitudinal trends in place of death for adult people who had died in cancer in Sweden 2013-2019.

Methods

A population-level longitudinal trend in place of death study was performed, based on register data of all adults aged 18 or above with a cancer diagnosis as underlying cause of death, in Sweden between 2013-2019. Data were retrieved from registers at the Swedish National Board of Health and Welfare and Statistics Sweden. In addition to a more descriptive overview of place of death (hospital, home, nursing home, and other places), multivariable linear regression analyses were used to analyse trends in place of death and associated socio-demographic factors, and healthcare services and utilisation.

Results

For the total cancer population 2019, dying in hospital was still most common (47.1%), followed by nursing home (25%) and own home (24.7%), and varied as related to sex, age, marital status, type of cancer, healthcare regions, and utilisation of specialist palliative care services.

From 2013 to 2019, the total number of home deaths increased 2.9 % whereas hospital deaths and nursing home deaths both decreased 2.1%.

For people residing in their own home, there was a downward trend for dying in hospital, while no trend was detected for people residing in nursing homes. The identified trend had cross-regional variations and inconsistencies.

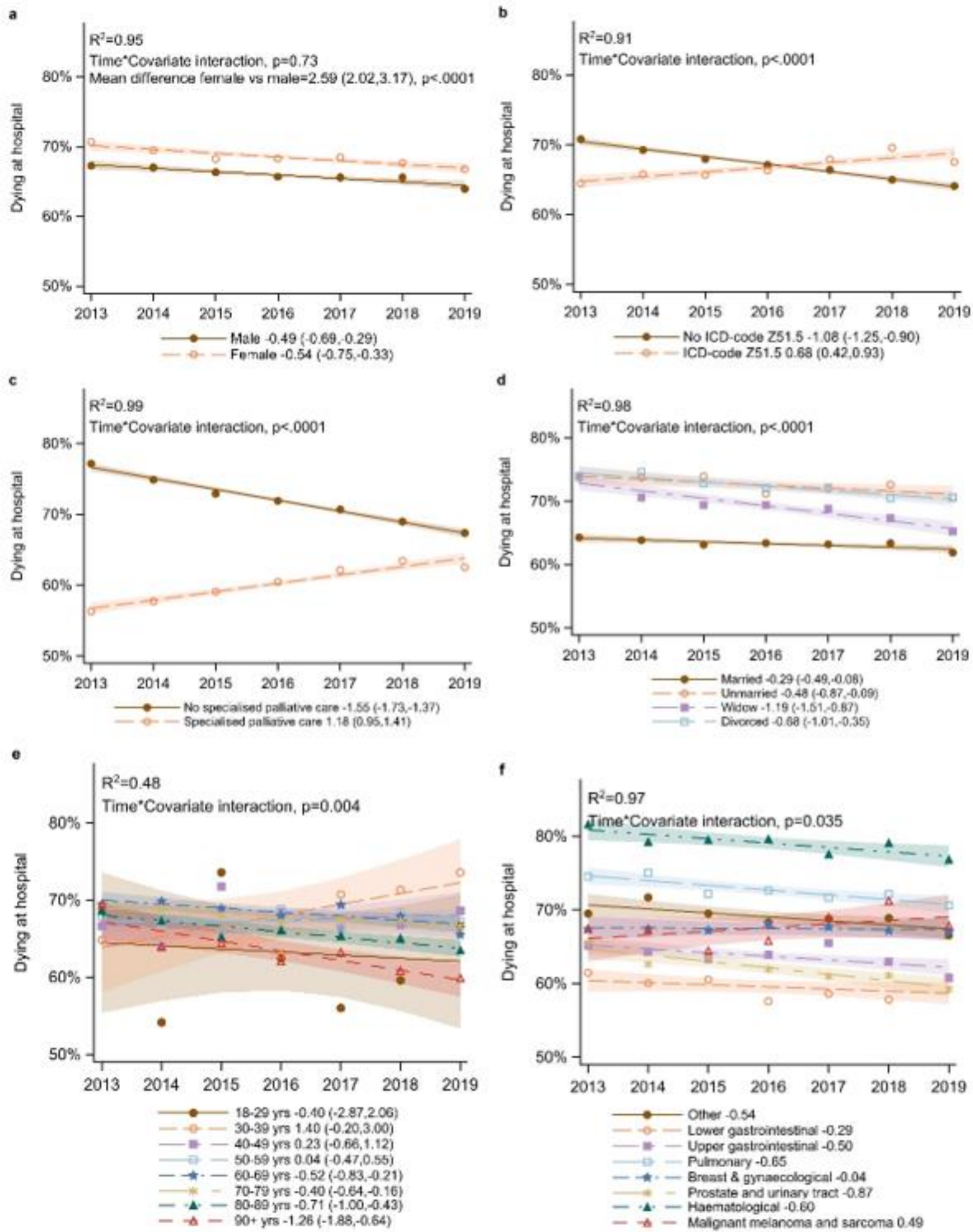


Figure 3 a-f. Interaction between longitudinal trends in place of death for people residing in own homes aged 18 and older (and dying in either hospitals or at home) and the covariates: sex (Fig. 3a), palliative care diagnosis (Fig. 3b), and death in specialised palliative service (Fig. 3c), marital status (Fig. 3d), age (Fig. 3e), cancer type (Fig. 3f). R² is the fraction of the total variation at the population level that may be explained by longitudinal trends across subgroups

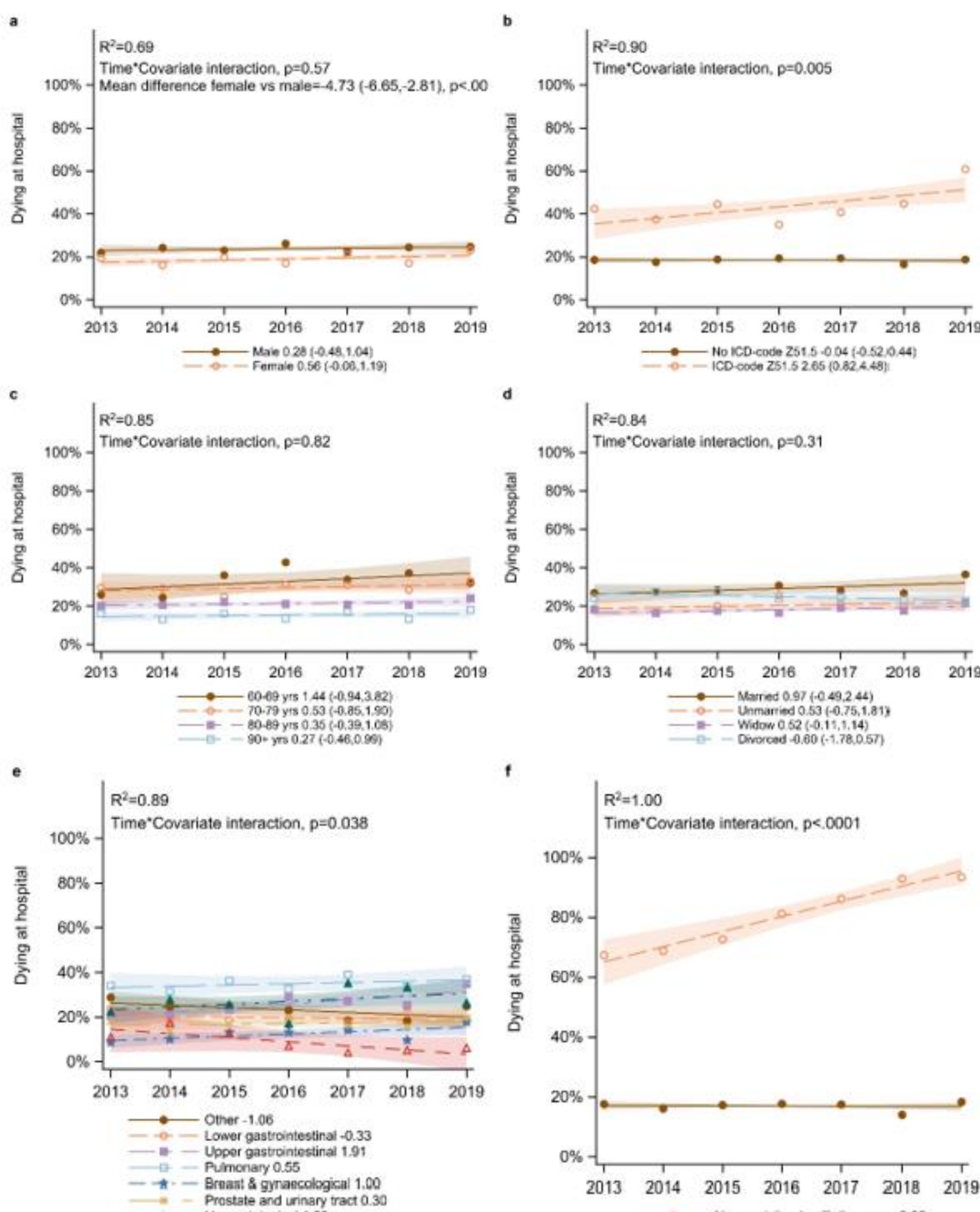


Figure 4 a-f. Interaction between longitudinal trends in place of death for people residing in nursing homes aged 60 and older (and dying in either hospitals or nursing homes) and the covariates: sex (Fig. 4a), palliative care diagnosis (Fig. 4b), age (Fig. 4c), marital status (Fig. 4d), cancer type (Fig. 4e), and death in specialised palliative services (Fig. 4f)

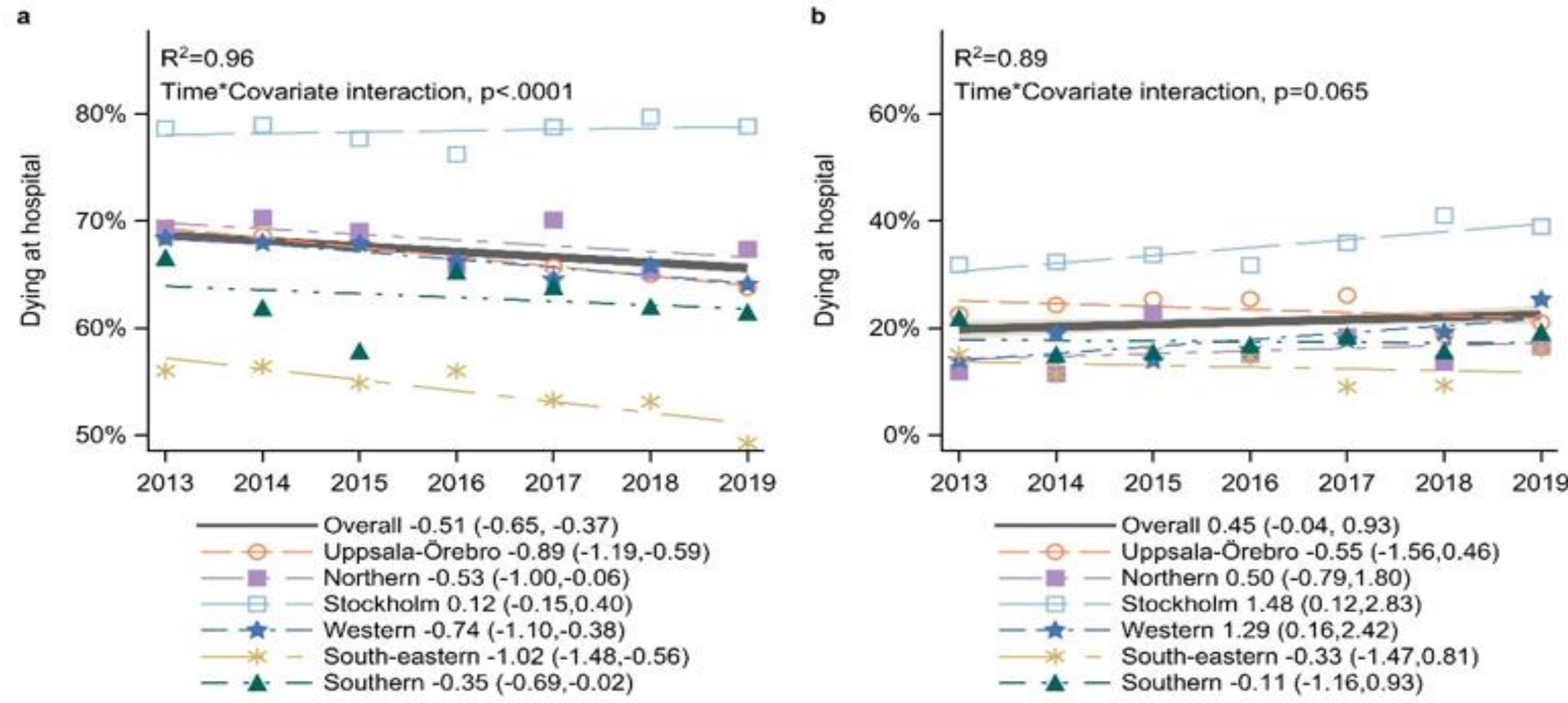


Figure 2. Longitudinal trends in place of death based on linear regression: a) the proportion of people dying in hospital for those residing in their own home (and dying in either hospitals or at home) (n= 103,836), b) the proportion of people dying in hospital for those residing in nursing homes (and dying in either hospitals or nursing homes) (n= 7,218); each figure showing for the total cancer population (black lines) and the interaction for the overall trend in the total cancer population with healthcare regions (coloured lines). R² is the fraction of the total variation at the population level that may be explained by longitudinal trends across regions.

Table 1. Population demographics					
Variables	Total (n=152 462)	Hospital (n=74 206)	Nursing home (n=38 986)	Home (n=35 784)	Other place or unknown (n=3 486)
Male	79 530	38 939 (49.0%)	19 139 (24.1%)	19 764 (24.9%)	1 688 (2.1%)
Female	72 932	35 267 (48.4%)	19 847 (27.2%)	16 020 (22.0%)	1 798 (2.5%)
Age at death					
18-29	424	245 (57.8%)	33 (7.8%)	136 (32.1%)	10 (2.4%)
30-39	986	592 (60.0%)	82 (8.3%)	278 (28.2%)	34 (3.4%)
40-49	3 313	1 939 (58.5%)	336 (10.1%)	910 (27.5%)	128 (3.9%)
50-59	10 013	5 774 (57.7%)	1 179 (11.8%)	2 764 (27.6%)	296 (3.0%)
60-69	28 643	16 268 (56.8%)	4 163 (14.5%)	7 372 (25.7%)	840 (2.9%)
70-79	49 659	25 963 (52.3%)	10 262 (20.7%)	12 200 (24.6%)	1 234 (2.5%)
80-89	45 237	19 046 (42.1%)	15 708 (34.7%)	9 709 (21.5%)	774 (1.7%)
90+	14 184	4 377 (30.9%)	7 223 (50.9%)	2 414 (17.0%)	170 (1.2%)
Cancer type					
Lower gastrointestinal	18 709	7 915 (42.3%)	5 061 (27.1%)	5 277 (28.2%)	456 (2.4%)
Upper gastrointestinal	29 689	14 572 (49.1%)	6 208 (20.9%)	8 156 (27.5%)	753 (2.5%)
Pulmonary	24 767	13 842 (55.9%)	5 201 (21.0%)	5 116 (20.7%)	608 (2.5%)
Breast & gynaecological	17 926	8 335 (46.5%)	5 122 (28.6%)	4 003 (22.3%)	466 (2.6%)
Prostate and urinary tract	24 934	10 082 (40.4%)	8 325 (33.4%)	6 054 (24.3%)	473 (1.9%)
Haematological	13 238	8 148 (61.6%)	2 774 (21.0%)	2 140 (16.2%)	176 (1.3%)
Malignant melanoma and sarcoma	4 230	2 090 (49.4%)	1 035 (24.5%)	998 (23.6%)	107 (2.5%)
Other	18 969	9 222 (48.6%)	5 260 (27.7%)	4 040 (21.3%)	447 (2.4%)
Palliative care diagnosis; ICD-code Z51.5	46 295	23 998 (51.8%)	8 678 (18.7%)	11 741 (25.4%)	1 878 (4.1%)
Living situation					
Home	137 769	69 677 (50.6%)	30 616 (22.2%)	34 159 (24.8%)	3 317 (2.4%)
Nursing home	7 859	1 576 (20.1%)	5 774 (73.5%)	467 (5.9%)	42 (0.5%)
Other	2 625	1 241 (47.3%)	811 (30.9%)	528 (20.1%)	45 (1.7%)
Residing in urban area	131 849	64 328 (48.8%)	34 605 (26.2%)	29 789 (22.6%)	3 127 (2.4%)
Potential palliative care needs	152 462	74 206 (48.7%)	38 986 (25.6%)	35 784 (23.5%)	3 486 (2.3%)

*Row percentages

Conclusion

The hypothesis was not confirmed. The results point to cross-regional inequity in palliative cancer care and need for national governance strategies and improved integration of palliative care in national healthcare structures.



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