

Inequalities in Healthy Life Years at age 50 in the EU: understanding changes between 2005 and 2010

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Background

- ❖ Healthy Life Years (HLY), a disability-free life expectancy, is the European Commission's preferred population health indicator for member states.
- ❖ HLY use the Global Activity Limitation Indicator (GALI) question from the EU-SILC survey (1): 'For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been; 1. severely limited, 2. limited but not severely, or 3. not limited at all?' For HLY we use no versus any limitation.
- ❖ Estimates of HLY at age 50 (HLY₅₀) in 2005 showed large variation in healthy ageing across Europe (2) with lowest in Estonia (men: 9.3 years, women: 10.6 years) to highest in Denmark (men: 23.7 years, women: 24.1 years).
- ❖ The large variation might be due in part to less than optimal harmonisation of the GALI introduced in 2005 with a major update in 2008.
- ❖ Drivers of inequalities were Gross Domestic Product (GDP) and expenditure on elderly care (both positively associated with HLY₅₀ for men and women), long term unemployment rate (negatively associated), and life-long learning and low education attainment (both positively associated, men only).

Aims

To investigate:

- ❖ changes in Life expectancy at age 50 (LE₅₀) and HLY₅₀ between 2005 and 2010.
- ❖ how HLY₅₀ inequalities have changed between 2005 and 2010.
- ❖ whether the same factors explain the HLY₅₀ inequalities in both years.

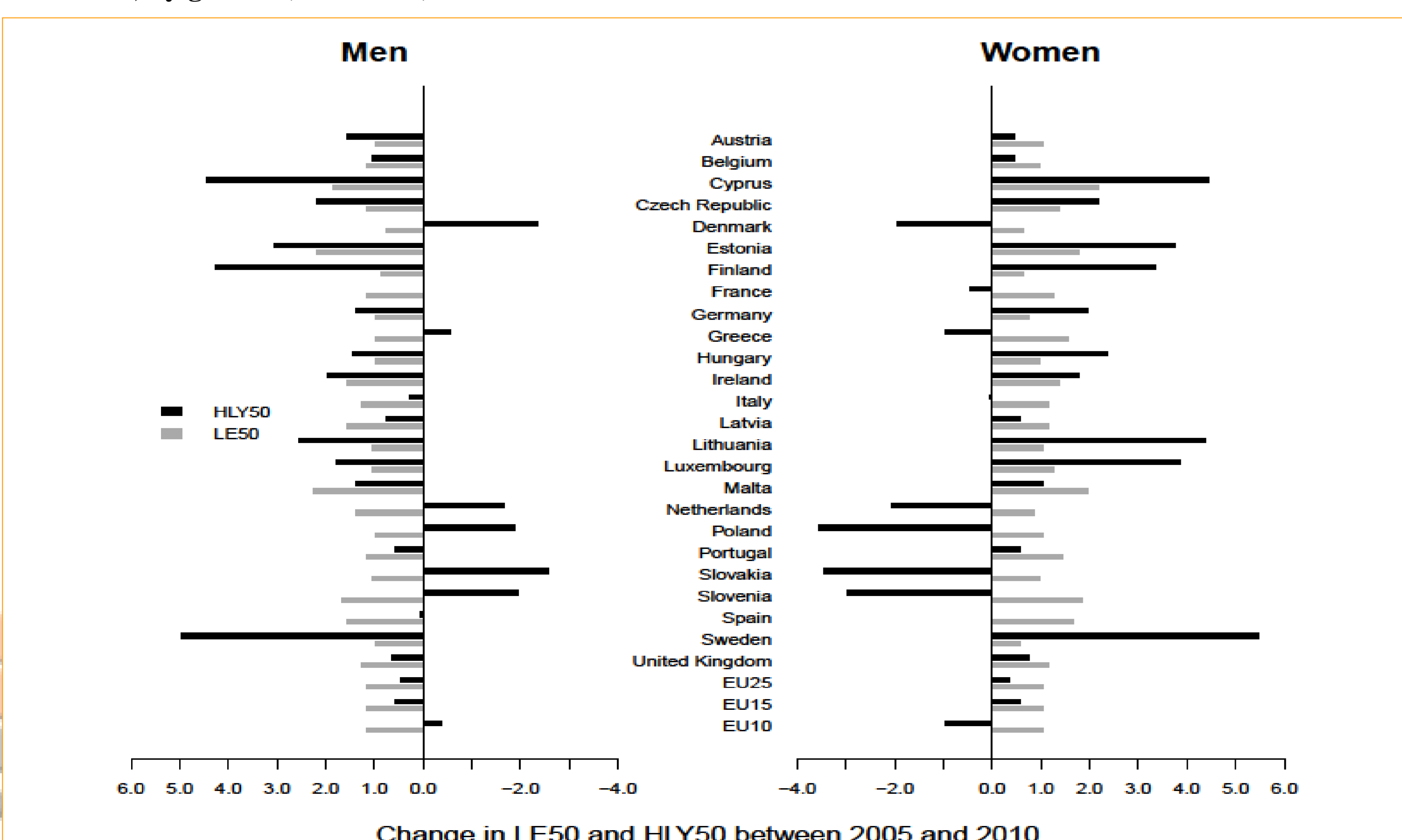
Methods

- ❖ Estimates of LE₅₀ and HLY₅₀ for each EU country for 2005 and 2010 and for men and women separately were obtained from the Eurohex database (3).
- ❖ Indicators considered for each country are GDP, poverty risk for people aged over 65 years (%), inequality of income distribution, employment rate of older workers (%), long-term unemployment rate (%), life-long learning (%), low education attainment (%) and material deprivation (%).
- ❖ Relationships between HLY₅₀ by gender and the indicators were investigated using meta-regression with permutation tests to adjust the p-values (4) for potential inflation of false positive results.
- ❖ Models were fitted including all of the EU25 countries, then separately for the established EU15 and newer joined EU10 countries.

Results – Changes in LE₅₀ and HLY₅₀

- ❖ LE₅₀ increased by similar amounts for men and women in most countries between 2005 and 2010 (figure 1).
- ❖ HLY₅₀ decreased in the EU10 overall with largest reductions in Slovenia, Slovakia and Poland.
- ❖ HLY₅₀ increased in the EU15 overall but decreased in Denmark, the Netherlands, Greece and France.
- ❖ Largest increases in HLY₅₀ in Cyprus, Estonia and Lithuania (EU10) and Sweden, Luxembourg and Finland (EU15).

Figure 1 – Changes in life expectancy (LE₅₀) and healthy life years (HLY₅₀) at age 50 between 2005 and 2010, by gender (2010-2005)



Results - Inequalities in HLY₅₀ in EU

- ❖ HLY₅₀ for the EU25 and EU15 rose between 2005 and 2010 but fell for the EU10 and overall increased less than LE₅₀ (table 1).
- ❖ In both years HLY₅₀ inequalities (range) exceeded those in LE₅₀ for men and women. For women in the EU25 this was more than twice as much compared to LE₅₀.
- ❖ For women, HLY₅₀ and LE₅₀ inequalities both increased over time with larger increases in HLY₅₀. For men, the increases were smaller along with slight reductions for EU25 LE₅₀ and EU15 HLY₅₀.
- ❖ For women, HLY₅₀ inequalities increased more in the EU10 than in the EU15. For men, the inequalities increase was smaller than women in the EU10 and reduced slightly in EU15.

Table 1 - Averages and ranges of life expectancy (LE₅₀) and healthy life years (HLY₅₀) at age 50 for men and women in 2005 and 2010

Country grouping	Measure	Men 2005	Men 2010	Change men 2005-2010	Women 2005	Women 2010	Change women 2005-2010
LE ₅₀	Average	28.6	29.8	1.2	33.5	34.6	1.1
	Range	9.0 (21.3, 30.3)	8.9 (22.6, 31.5)	-0.1	6.1 (29.3, 35.4)	6.4 (30.4, 36.8)	0.3
LE ₅₀	Average	29.4	30.6	1.2	34.0	35.1	1.1
	Range	2.2 (28.1, 30.3)	2.4 (29.1, 31.5)	0.2	3.5 (31.9, 35.4)	4.1 (32.7, 36.8)	0.6
LE ₅₀	Average	24.3	25.5	1.2	30.7	31.8	1.1
	Range	8.2 (21.3, 29.5)	8.8 (22.6, 31.4)	0.6	3.6 (29.3, 32.9)	4.6 (30.4, 35.0)	1.0
HLY ₅₀	Average	17.4	17.9	0.5	18.2	18.6	0.4
	Range	14.5 (9.2, 23.7)	15.5 (9.9, 25.4)	1.0	13.5 (10.6, 24.1)	16.3 (9.7, 26.0)	2.8
HLY ₅₀	Average	18.0	18.6	0.6	18.5	19.1	0.6
	Range	10.8 (12.9, 23.7)	10.7 (14.7, 25.4)	-0.1	11.3 (12.8, 24.1)	12.5 (13.5, 26.0)	1.2
HLY ₅₀	Average	14.6	14.2	-0.4	16.9	15.9	-1.0
	Range	12.6 (9.2, 21.8)	13.3 (9.9, 23.2)	0.7	12.1 (10.6, 22.7)	14.1 (9.7, 23.8)	2.0

Results - Drivers of Inequality

- ❖ **EU25** Material deprivation has strong negative associations to HLY₅₀ for men and women in 2005 and 2010. Long term unemployment rate has strong negative association to HLY₅₀ for men and women in 2010 only (table 2).
- ❖ **EU10** Only long term unemployment rate has a strong negative association to HLY₅₀ for women in 2010 (results table not shown).
- ❖ **EU15** No associations for men or women in either year (results table not shown).

Table 2 – Meta-regression analyses of factors associated with Healthy Life Years at age 50 (HLY₅₀) in EU25, by gender and year (2005, 2010)

EU25	Men				Women			
	2005	2010	2005	2010	2005	2010	2005	2010
	Coefficient (SE)	Adjusted P value	Coefficient (SE)	Adjusted P value	Coefficient (SE)	Adjusted P value	Coefficient (SE)	Adjusted P value
GDP	0.042 (0.017)	0.114	0.044 (0.017)	0.080	0.038 (0.018)	0.266	0.047 (0.016)	0.050
Poverty risk	0.066 (0.077)	0.949	0.149 (0.104)	0.635	0.011 (0.079)	1.000	0.056 (0.105)	0.997
Income inequality	1.119 (0.851)	0.662	2.352 (0.960)	0.112	0.120 (0.998)	1.000	0.803 (1.169)	0.986
Employment rate of older workers	0.067 (0.075)	0.959	0.193 (0.082)	0.209	-0.038 (0.058)	0.991	0.026 (0.063)	1.000
Long term unemployment rates	-0.682 (0.292)	0.200	-0.713 (0.228)	0.033	-0.185 (0.264)	0.989	-0.821 (0.270)	0.052
Life-long learning	0.258 (0.122)	0.279	0.275 (0.120)	0.176	0.149 (0.092)	0.584	0.169 (0.077)	0.230
Low education attainment	0.105 (0.040)	0.108	0.116 (0.044)	0.094	0.072 (0.044)	0.424	0.074 (0.046)	0.454
Material deprivation	-0.152 (0.043)	0.018	-0.219 (0.060)	0.005	-0.127 (0.044)	0.089	-0.197 (0.057)	0.015

Limitations in our study

- ❖ Despite a major improvement in 2008, the GALI instrument is still not totally harmonised with 14 countries including Romania and Bulgaria being 'fully comparable' by 2010 and a further seven 'partially comparable'. Future analyses will not have this problem as by 2012 only two countries remained 'not fully comparable'.
- ❖ Our analyses are cross-sectional, so that causality of the associated factors cannot be inferred, but we included only explanatory variables that were measured in the same way across all countries.

Conclusions

- ❖ Increases in HLY₅₀ for the EU25 between 2005 and 2010 have not kept pace with the increases in LE₅₀.
- ❖ LE₅₀ increased in all countries whereas HLY₅₀ decreased in the EU10 but increased in the EU15 overall.
- ❖ Inequalities in HLY₅₀ have widened further, particularly in the EU10 countries.
- ❖ Material deprivation and long term unemployment were factors explaining inequalities in HLY₅₀ across the EU.

References

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