



Background

Life expectancy (LE) is increasing in all European countries but substantial gaps are still evident, principally between Eastern and Western countries. but gaps in Healthy Life Years (HLY) are even greater¹. Here we extend other studies and our previous one on inequalities in HLY at age 50¹ in three ways by:

- ❖ deriving data-driven groupings to assess patterns rather than standard geographies;
- ❖ using partial life and health expectancies throughout adulthood rather than focusing specifically on one age;
- ❖ adding two further health expectancies to HLY.

Aims

To determine whether patterns of life and health expectancies in the 25 EU countries are similar in early, mid and late adulthood through the use of partial life and health expectancies.

Methods

Population and mortality data for each of 25 countries for 2005-7 was obtained from EHEMU database. Partial health expectancies for 16-34, 35-54, 55-74 years age groups calculated by Sullivan method² with each of three health questions from the EU Statistics on Income and Living Conditions (EU-SILC) 2005-7 (Box 1).

Hierarchical cluster analysis was used to explore similar groupings of countries on the partial life and health expectancies for men and women, entering the years of life spent with each health measure in each age group (transformed into Z scores). The most appropriate number of clusters was selected as the solution with the smallest value.

Box 1: Definitions of the three health expectancies

- ❖ LE in good SPH from:
How is your health in general? Very good / good / fair/ bad / very bad.
- ❖ LE free of morbidity-free from:
Do you suffer from (have) any chronic (long-standing) illness or condition (health problem)? Yes/ No.
- ❖ LE free of activity limitation (HLY) from:
For the past 6 months or more have you been limited in activities people usually do because of a health problem? Yes, strongly limited / Yes, limited / No, not limited.

Results

The cluster analysis produced 6 groups of countries:

1. Estonia, Hungary, Latvia, Lithuania, Poland, Portugal, Slovakia
2. Finland
3. Czech Republic, Germany, Slovenia
4. Denmark, Ireland, Netherlands, Sweden, United Kingdom
5. Greece, Malta
6. Austria, Belgium, Cyprus, France, Italy, Luxembourg, Spain

The deviations of these groups from the average are shown below (red below average, green above) to illustrate the characteristics of the groups.

			1	2	3	4	5	6	All
Age 16-34 yrs	LE	M	18.8	18.8	18.9	18.9	18.9	18.9	18.8
		F	18.9	19.0	19.0	19.0	19.0	19.0	18.9
LE free of morbidity		M	16.4	15.2	16.4	15.9	18.0	17.0	16.5
		F	16.7	14.9	16.2	15.4	18.2	16.9	16.5
LE free activity limitation (HLY)		M	16.9	15.3	16.8	17.4	18.2	17.4	17.2
		F	17.2	14.7	16.8	17.0	18.4	17.4	17.2
LE in good SPH		M	15.3	17.0	16.4	17.3	18.0	17.4	16.7
		F	15.3	17.2	16.2	16.8	18.1	17.2	16.6
Age 35-54 yrs	LE	M	18.9	19.5	19.5	19.7	19.7	19.6	19.4
		F	19.6	19.8	19.8	19.8	19.8	19.8	19.7
LE free of morbidity		M	14.0	13.1	14.0	14.5	17.0	15.6	14.7
		F	13.9	13.0	13.8	13.7	16.9	15.4	14.5
LE free activity limitation (HLY)		M	14.8	13.7	15.1	16.8	18.0	16.3	15.9
		F	15.1	13.7	15.1	15.8	18.1	16.0	15.7
LE in good SPH		M	9.7	14.3	12.5	16.3	16.8	15.1	13.6
		F	9.2	15.5	12.3	15.6	16.5	14.7	13.2
Age 55-74 yrs	LE	M	15.6	17.5	17.1	17.9	17.9	17.8	17.1
		F	18.1	18.8	18.6	18.6	18.9	18.9	18.6
LE free of morbidity		M	7.2	6.7	8.3	10.0	11.0	10.7	9.2
		F	7.1	6.6	8.6	9.8	10.9	10.7	9.1
LE free activity limitation (HLY)		M	8.1	9.4	10.1	13.1	13.4	11.6	10.8
		F	8.2	9.4	10.5	13.0	13.3	11.2	10.7
LE in good SPH		M	2.9	8.7	6.0	12.1	9.9	9.3	7.7
		F	2.4	9.6	6.1	12.1	9.2	8.8	7.4

Conclusion

- ❖ Country clusters only partly reflect other geographies.
- ❖ Most clusters reflected same patterns across age groups although Group 4 (Denmark, Ireland, Netherlands, Sweden, United Kingdom) had below average LE free of morbidity in the youngest age group but above average in the oldest.
- ❖ Such differences across age groups have implications for future healthcare costs.

References

1. Jagger, C., C. L. Gillies, et al. (2008). "Inequalities in healthy life years in the 25 countries of the European Union in 2005: a cross-national meta-regression analysis." *Lancet* 372: 2124–31.
2. Sullivan, D.F. (1971). "A Single Index of Mortality and Morbidity." *HSMHA Health Reports* 86:347-54.