A COMPARATIVE STUDY OF INEQUALITIES IN UNHEALTHY LIFE YEARS

Wilma J Nusselder, Jose Rubio Valverde, Johan P Mackenbach

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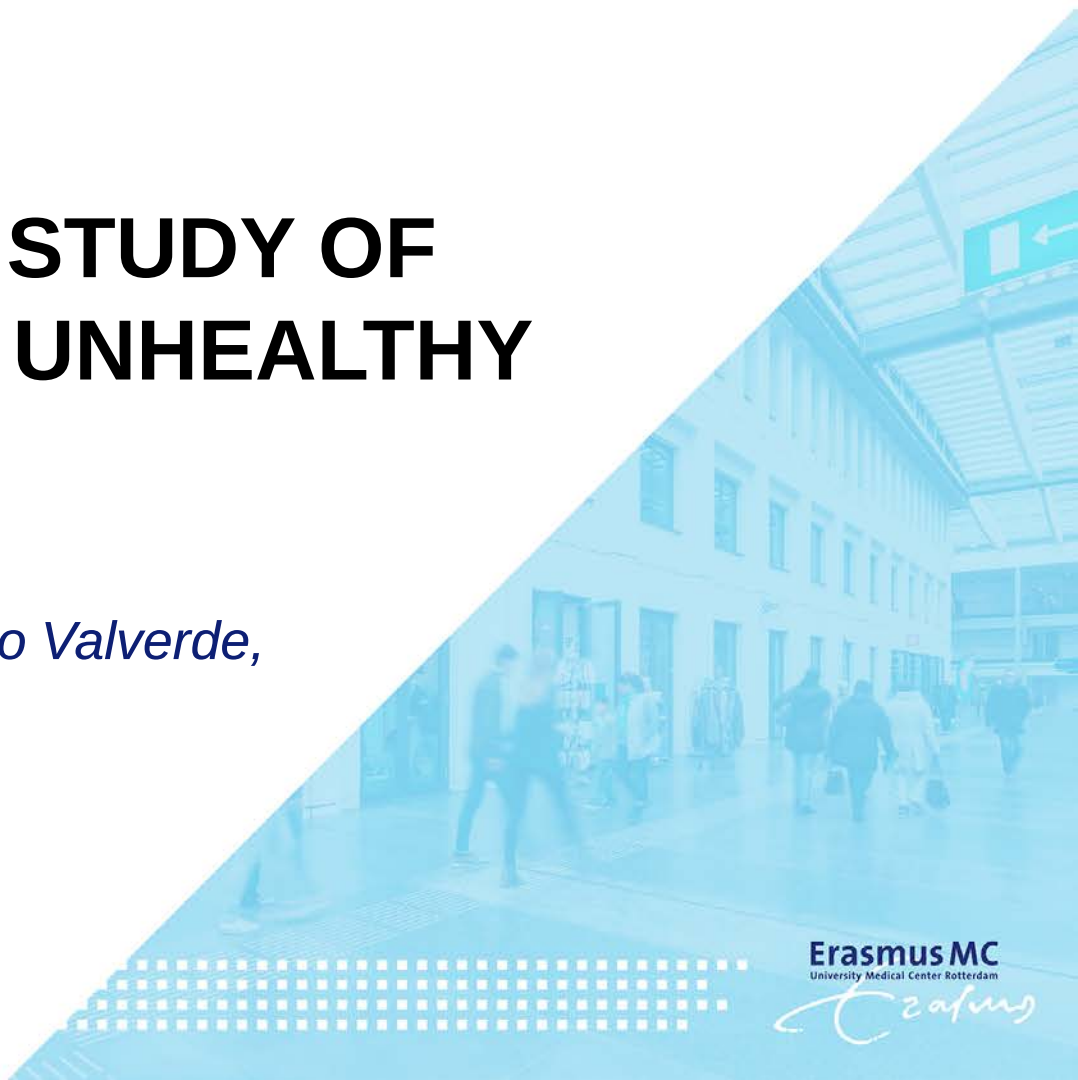


Health inequalities

- Health inequalities are a major challenge for public health policy
- Reduction of health inequalities is a priority of health and social policies in many countries
- Health expectancy measures are increasingly used for monitoring health and target setting

Inequalities in health expectancy

Prior studies:

- Lower SES: lower DFLE and more years with disability
- Inequalities in DFLE are larger than inequalities in LE
- Inequalities in LE and DFLE differ between (European) countries

However:

- Limited number of countries with reliable mortality data by SES
- Data around 2000
- Inequalities in life expectancy *with* disability are understudied

This presentation

- Mortality from census-linked follow-up studies for 10 countries, all measured around 2010
- Disability based on GALI indicator from EU-SILC
- Healthy life-years (HLY) + unhealthy life-years (ULY)
- Partial LE, HLY and ULY: between 35 and 80 years
- Special focus on ULY
- Decomposition analysis assessing the contribution of mortality vs. disability differences to inequalities in ULY (and HLY)

Core questions

1. How large are educational differences in HLY and ULY in Europe around 2010?
2. Are differences in ULY (and HLY) larger than differences in LE?
3. Which part of the inequality in ULY (HLY) is due to mortality differences and which part is due to disability differences?

Educational groups:

1. Low: ISCED 0-2
2. Mid: ISCED 3-4
3. High: ISCED 5-6

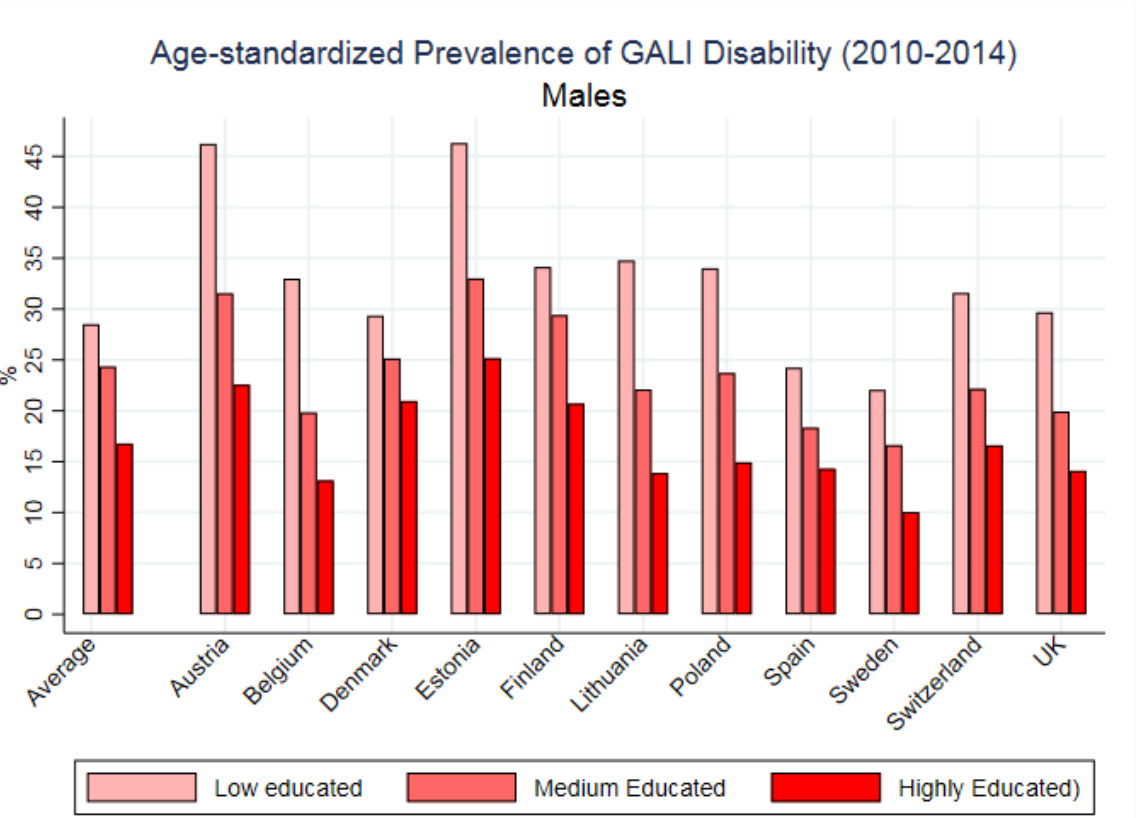
Data: mortality and disability

	Mortality		GALI Disability	
	Period	Source	Period	Source
Austria	2011-2013	Longitudinal	2010-2014	EU-SILC
Belgium	2006-2011	Longitudinal	2010-2014	EU-SILC
Denmark	2010-2014	Longitudinal	2010-2014	EU-SILC
England & Wales	2011-2013	Longitudinal	2010-2014	EU-SILC
Estonia	2012-2015	Longitudinal	2010-2014	EU-SILC
Finland	2011-2014	Longitudinal	2010-2014	EU-SILC
Lithuania	2011-2014	Longitudinal	2010-2014	EU-SILC
Poland	2010-2012	Cross-sectional	2010-2014	EU-SILC
Spain	2007-2011	Longitudinal	2010-2014	EU-SILC
Switzerland	2010-2014	Longitudinal	2010-2014	EU-SILC

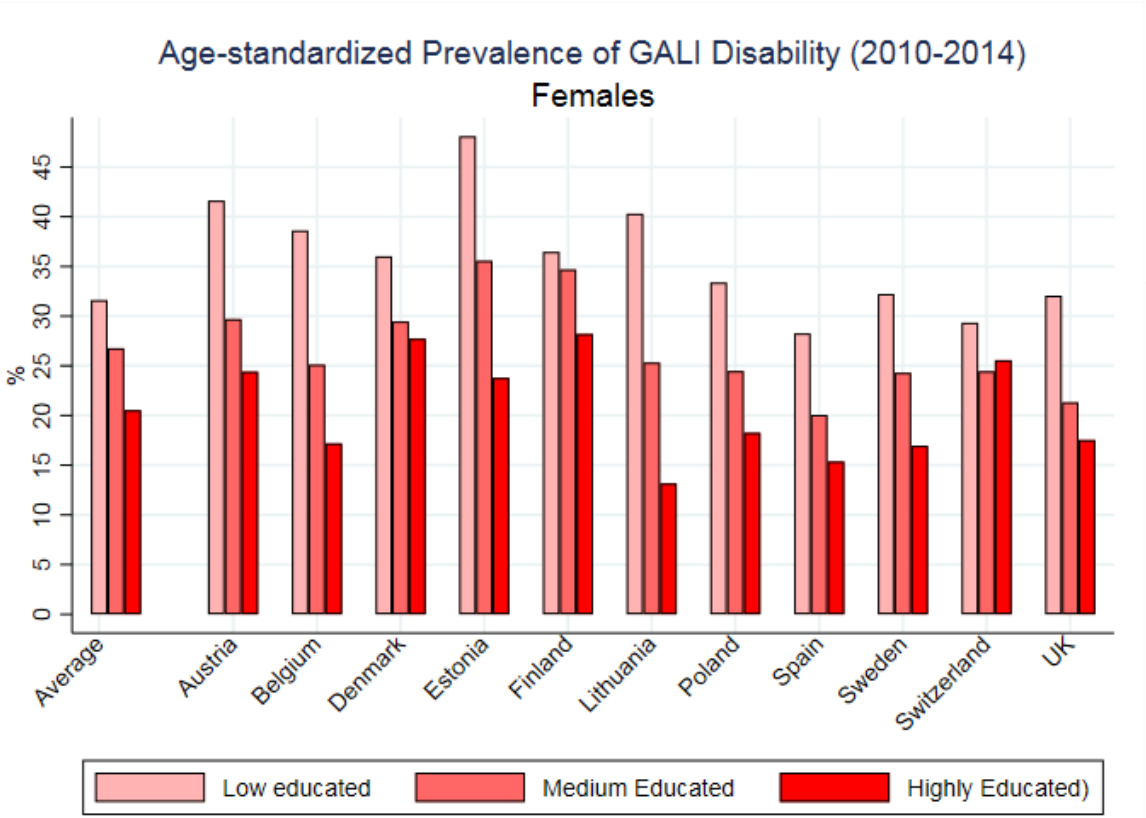
Methods

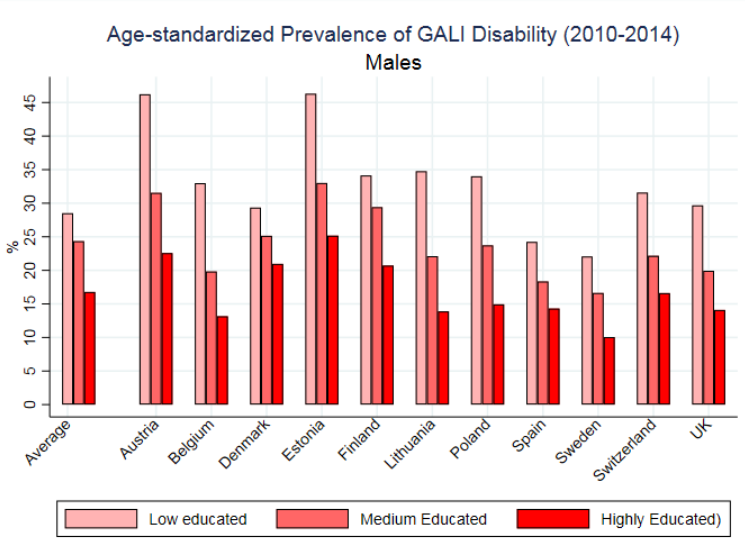
Input	Method	Result
Census/survey follow up	Deaths /PY	Mortality rates by age, sex and education
Survey	Disabled/N (Using survey weights)	% with disability by age, sex and education
Mortality rates % with disability	Sullivan life table method	Partial (35-79 yrs)HLY, ULY, (LE) by age, sex and education
Mortality rates % with disability	Decomposition method (Nusselder & Looman, 2004)	Contribution of mortality and disability differences (total, by age) to inequality in ULY (HLY)

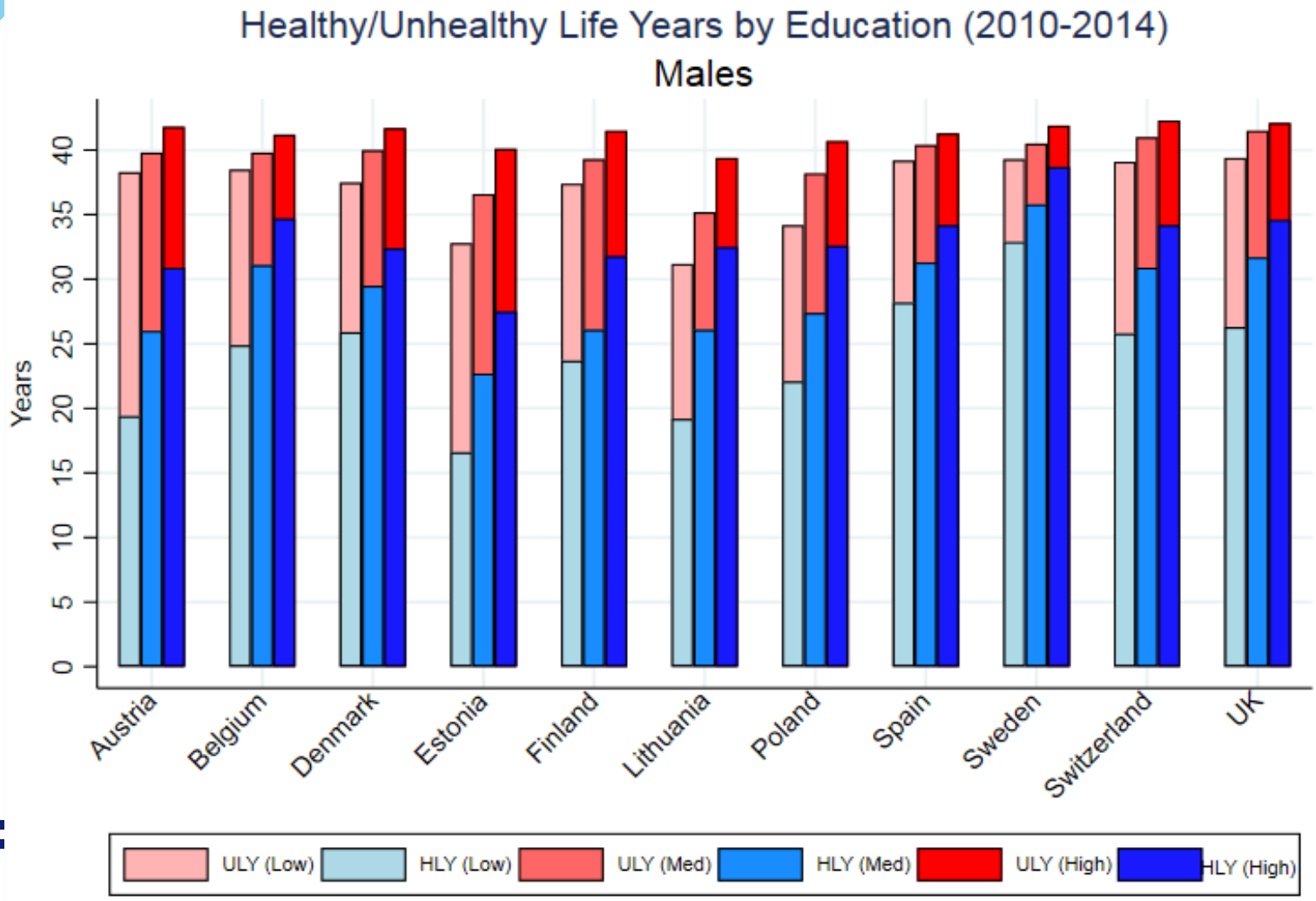
Prevalence of disability (GALI)

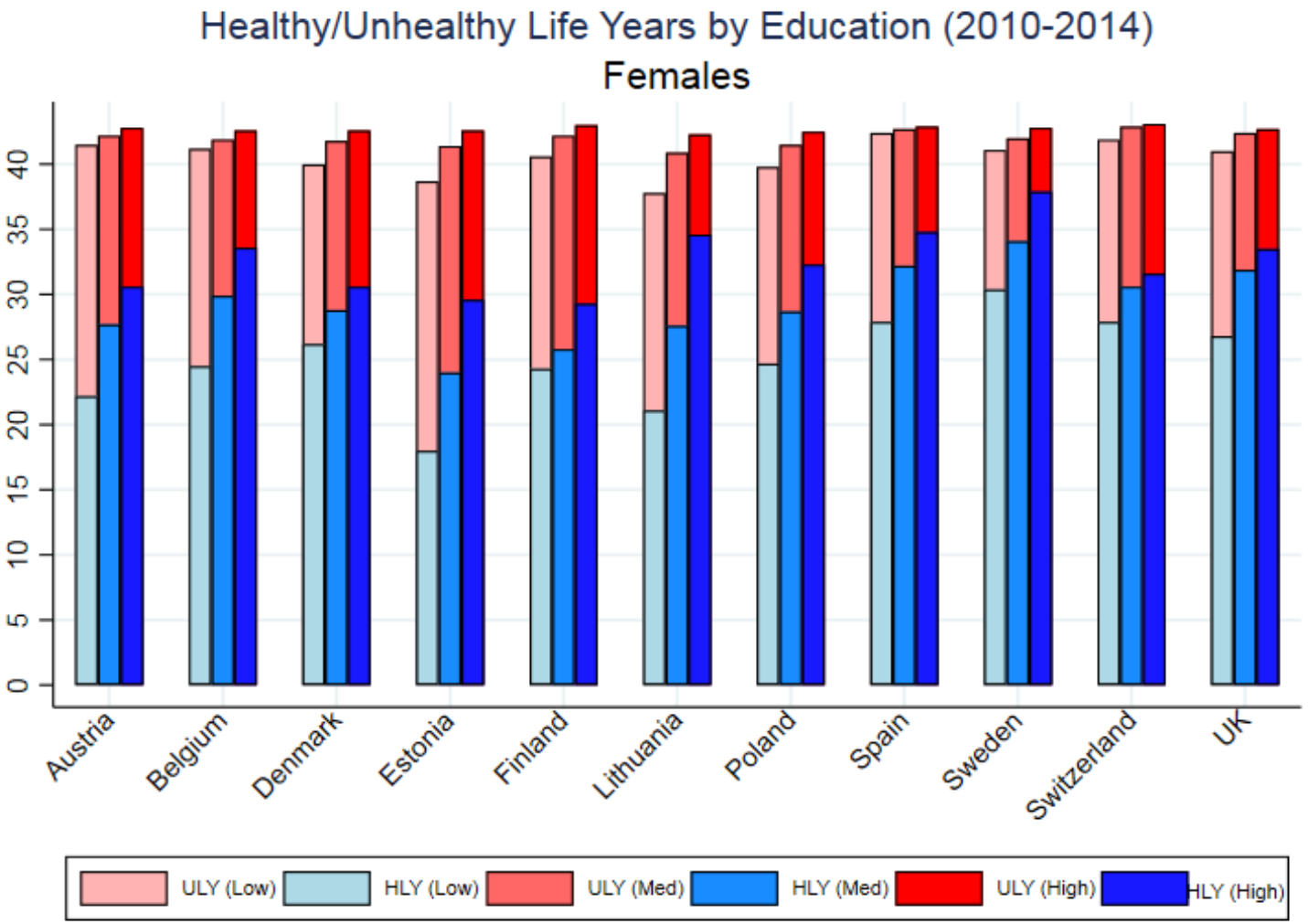


Prevalence of disability (GALI)






Healthy/Unhealthy Life Years by Education (2010-2014)
Males
Years
0
5
10
15
20
25
30
35
40
Austria
Belgium
Denmark
Estonia
Finland
Lithuania
Poland
Spain
Sweden
Switzerland
UK
ULY (Low)
HLY (Low)
ULY (Med)
HLY (Med)
ULY (High)
HLY (High)


Healthy/Unhealthy Life Years by Education (2010-2014)
Females
0
5
10
15
20
25
30
35
40
Austria
Belgium
Denmark
Estonia
Finland
Lithuania
Poland
Spain
Sweden
Switzerland
UK
ULY (Low)
HLY (Low)
ULY (Med)
HLY (Med)
ULY (High)
HLY (High)

Educational differences: LE

	All	Austria	Belgium	Denmark	Estonia	Finland	Lithuania	Poland	Spain	Switzerland	UK
Men											
HLY	**-7.9**	-11.5	-9.8	-6.5	-10.9	-8.1	-13.4	-10.6	-6.0	-8.4	-8.3
ULY	**3.7**	8.0	7.1	2.3	3.6	4.0	5.2	4.1	3.9	5.3	5.6
LE	**-4.3**	-3.5	-2.7	-4.2	-7.3	-4.1	-8.2	-6.5	-2.1	-3.2	-2.7
Women											
HLY	**-5.9**	-8.4	-9.1	-4.4	-11.5	-4.9	-13.4	-7.6	-6.9	-3.7	-6.7
ULY	**4.4**	7.1	7.7	1.8	7.6	2.5	9.0	4.8	6.3	2.5	5.1
LE	**-1.5**	-1.3	-1.4	-2.6	-3.9	-2.4	-4.5	-2.7	-0.6	-1.2	-1.7

- Large inequalities in LE, in particular in Lithuania, Estonia and Poland among men

Educational differences: HLY

	All	Austria	Belgium	Denmark	Estonia	Finland	Lithuania	Poland	Spain	Switzerland	UK
Men											
HLY	**-7.9**	-11.5	-9.8	-6.5	-10.9	-8.1	-13.4	-10.6	-6.0	-8.4	-8.3
ULY	**3.7**	8.0	7.1	2.3	3.6	4.0	5.2	4.1	3.9	5.3	5.6
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Women											
HLY	**-5.9**	-8.4	-9.1	-4.4	-11.5	-4.9	-13.4	-7.6	-6.9	-3.7	-6.7
ULY	**4.4**	7.1	7.7	1.8	7.6	2.5	9.0	4.8	6.3	2.5	5.1
LE	**-1.5**	-1.3	-1.4	-2.6	-3.9	-2.4	-4.5	-2.7	-0.6	-1.2	-1.7

- Large inequalities than in LE

Educational differences: ULY

	All	Austria	Belgium	Denmark	Estonia	Finland	Lithuania	Poland	Spain	Switzerland	UK
Men											
HLY	**-7.9**	-11.5	-9.8	-6.5	-10.9	-8.1	-13.4	-10.6	-6.0	-8.4	-8.3
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ULY	**4.4**	7.1	7.7	1.8	7.6	2.5	9.0	4.8	6.3	2.5	5.1
LE	**-1.5**	-1.3	-1.4	-2.6	-3.9	-2.4	-4.5	-2.7	-0.6	-1.2	-1.7

- Smaller inequalities than in HLY

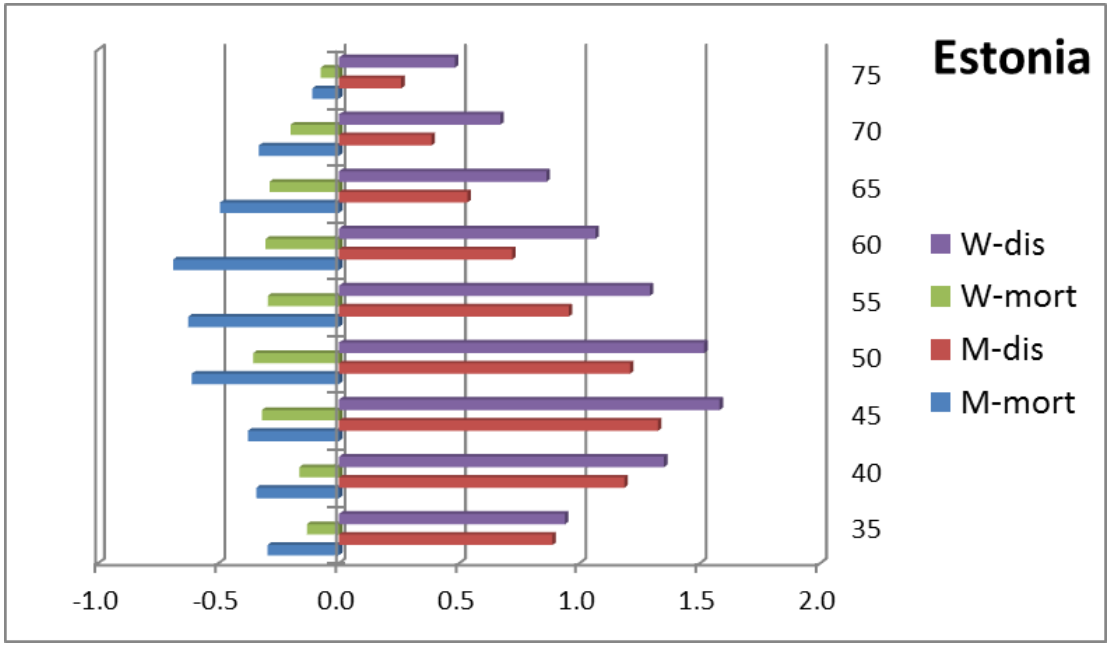
Educational differences: ULY in context

	All	Austria	Belgium	Denmark	Estonia	Finland	Lithuania	Poland	Spain	Switzerland	UK
Men											
HLY	**-7.9**	-11.5	-9.8	-6.5	-10.9	-8.1	-13.4	-10.6	-6.0	-8.4	-8.3
ULY	**3.7**	**8.0**	**7.1**	**2.3**	**3.6**	**4.0**	**5.2**	**4.1**	**3.9**	**5.3**	**5.6**
LE	**-4.3**	-3.5	-2.7	-4.2	-7.3	-4.1	-8.2	-6.5	-2.1	-3.2	-2.7
Women											
HLY	**-5.9**	-8.4	-9.1	-4.4	-11.5	-4.9	-13.4	-7.6	-6.9	-3.7	-6.7
ULY	**4.4**	7.1	7.7	1.8	7.6	2.5	9.0	4.8	6.3	2.5	5.1
LE	**-1.5**	-1.3	-1.4	-2.6	-3.9	-2.4	-4.5	-2.7	-0.6	-1.2	-1.7

- small: Denmark, but also Estonia (Poland, Lithuania)
- large: Austria, Belgium
- inequality ULY > LE: women (most countries), men: half of countries
- 3 groups: consistent; smaller ULY gaps, larger ULY gaps

Decomposition inequality ULY: mortality vs disability differences

Estonia: ULY gap	Men	Women
High educated	12.6	13.0
Low educated	16.2	20.7
Dif High-Low	3.6	7.6
Mortality	-3.9	-2.1
Disability	7.5	9.8



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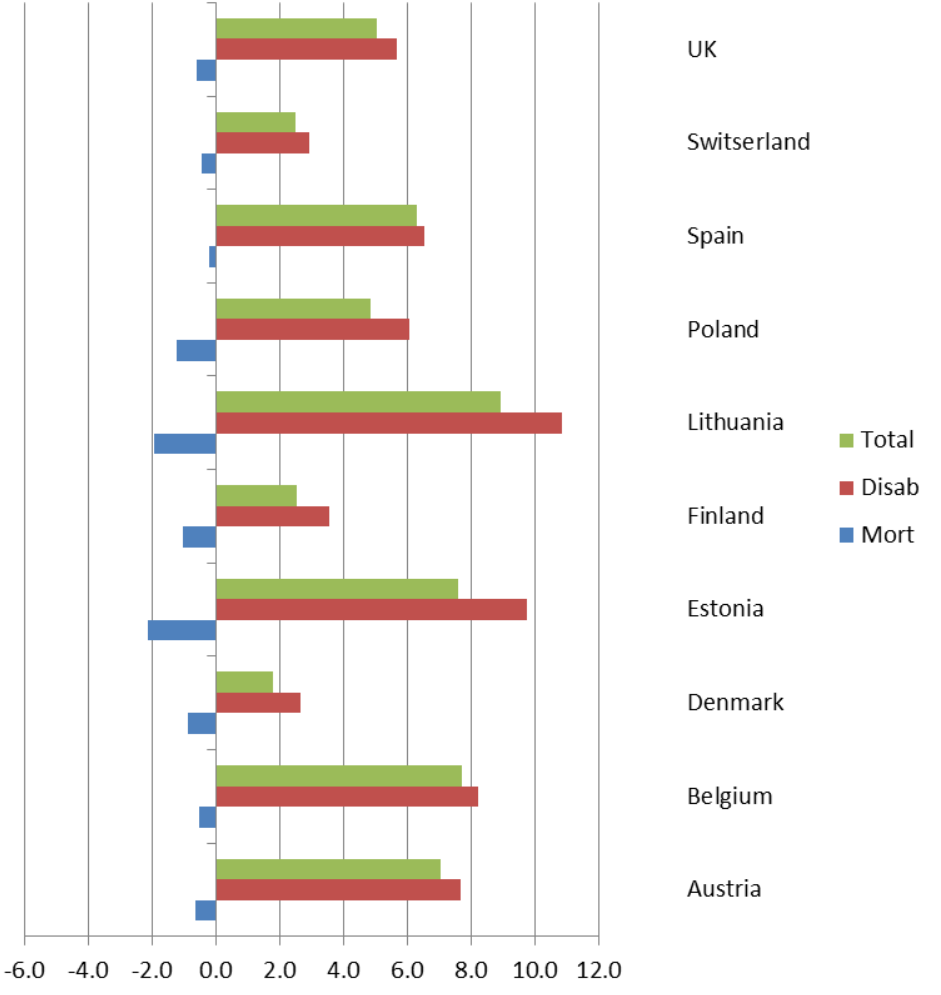
Decomposition ULY gap men

Decomposition ULY gap women



Decomposition: opposite effects ULY

	HLY inequality	ULY inequality
Excess mortality low educated	+	-
Excess disability low educated	++	++
Net effect size	++	+
Net effect gap	HLY>LE HLY>ULY	ULY vs. LE: mixed ULY < HLY

Conclusion descriptive analyses

- HLY inequalities: large, large variations between countries and larger than in LE and ULY

- ULY inequalities: mixed picture

  - small (large): in countries with small (large) inequalities

  - small: in countries with *large* inequalities in mortality (men)

  - large: Austria, Belgium, despite small inequalities in mortality ??

  - inequality > LE: women (most countries), men: half of countries

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Conclusion decomposition analyses

- Inequalities in disability explain largest part of inequalities in HLY and ULY
- Inequalities in mortality add to inequalities in HLY but reduce inequalities in ULY

- Large Inequalities in mortality in Central/Eastern Europe explain small inequalities in ULY
- (Decomposition can not explain large inequalities in Austria, Belgium)

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Limitations

- Disability (GALI) is self reported: reporting GALI may vary between countries, genders and educational groups (and surveys): Austria, Belgium?
- Sullivan method gives only valid results in situations of constant or gradually changing disability and mortality
- Decomposition method does not provide insight in differences in incidence, recovery and mortality, only in contribution of differences in disability prevalence vs. mortality
- Limited number of countries: Italy, Netherlands, Hungary will be added (same period) as well as France, Norway, Sweden (< 2010)

Implications

- Inequalities in ULY are complex but should not be ignored
- Small inequalities in ULY can be both “good news” and “bad news”, depending on whether high excess mortality or low excess disability explains the small gap
- To reduce the large inequalities in HLY and ULY interventions and policies that can successfully reduce inequalities in disability should be targeted
- Large excess mortality in men in Central and Eastern Europe stresses the need for action to reduce the excess mortality. However, when not accompanied with reductions in excess disability, inequalities in ULY will rise

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This study is based on data from Eurostat, European Union Statistics on Income and Living Conditions survey, reference years 2010 and 2014. The responsibility for all conclusions drawn from the data lies entirely with the authors.

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