



Wittgenstein Centre

FOR DEMOGRAPHY AND
GLOBAL HUMAN CAPITAL



Gender Disparities in Healthy Life Expectancy at Older Ages: A Cross-National Comparison (Going Beyond the Gender Gap in Healthy Lifespans)

Vanessa di Lego, Marília R. Nepomuceno, Cássio M. Turra

Vienna Institute of Demography (OeAW), Wittgenstein Centre (IIASA, OeAW, University of Vienna), Vienna, Austria

Max Planck Institute for Demographic Research, Rostock, Germany

Cedeplar, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

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Motivation

- **Gender disparities in health** have been extensively studied worldwide (Case and Paxson 2005; Crimmins and Kim 2010; Andrade et al. 2011; di Lego et al. 2020; Nepomuceno et al 2021; Grundy 2006; Jacobsen et al. 2008; Mathers et al. 2001; Oksuzyan et al. 2014; Verbrugge 1989; Yong et al. 2010)
- **Men have higher mortality than women at all ages across different nations and for many leading causes of death** (Crimmins and Saito 2001; Nusselder et al. 2010; Rieker and Bird 2005; Van Oyen et al. 2013).
- **Women perform worse in terms of disability, chronic morbidity and self-rated health outcomes - puzzling/paradoxical that the proportion of life spent in good health is higher for men than for women** (Crimmins et al. 2002; Luy and Minagawa 2014; Robine et al. 2001; Spiers et al. 2003; Robine et al. 2009; Van Oyen et al. 2010; Yokota et al. 2019).
- **Pattern holds for different countries and with different levels of development, gender roles and Welfare State Systems** (Andrade et al. 2014; Camargos et al. 2007; Palloni and McEniry 2007; Zunzunegui et al. 2009).



Motivation

- In part, this has motivated the use of **gender gap indices in healthy lifespans as indicators of gender inequality**.
- **Policy makers use gaps** to benchmark countries, **monitor changes over time**, and **identify the pace** at which countries are closing or widening gender gaps in health (WHO 2020; European Institute for Gender Equality 2021; World Economic Forum 2021).
- Despite gaps being an easy and straightforward way to relate the difference between two quantities, **gaps may blend several dimensions of health differences** between women and men, and consequently lead to misleading conclusions.
- **gender gaps in health may be country-specific**, different countries have specific health and mortality trajectories and **cultural and gender roles** (Okojie 1994; WCF 2018).



Objective

- **Estimate** gender disparities in health expectancy across different countries
- **Decompose** the gender gap into contributions of mortality and disability
- **Assess** whether gaps are informative of gender inequality in healthy lifespans.



Data

GATEWAY TO
GLOBAL
AGING
DATA

SURVEYS
AT A GLANCE

CONCORDANCE
ACROSS SURVEYS

DOCUMENTATION
AND PRESENTATIONS

GRAPHS
AND TABLES

POLICY
EXPLORER

PUBLICATIONS
BASED ON SURVEYS

DOWNLOADS
DATA AND LINKS

NEWS
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ABOUT
OUR TEAM

HELP
FAQ



GATEWAY TO GLOBAL AGING DATA

A platform for population survey data on aging around
the world



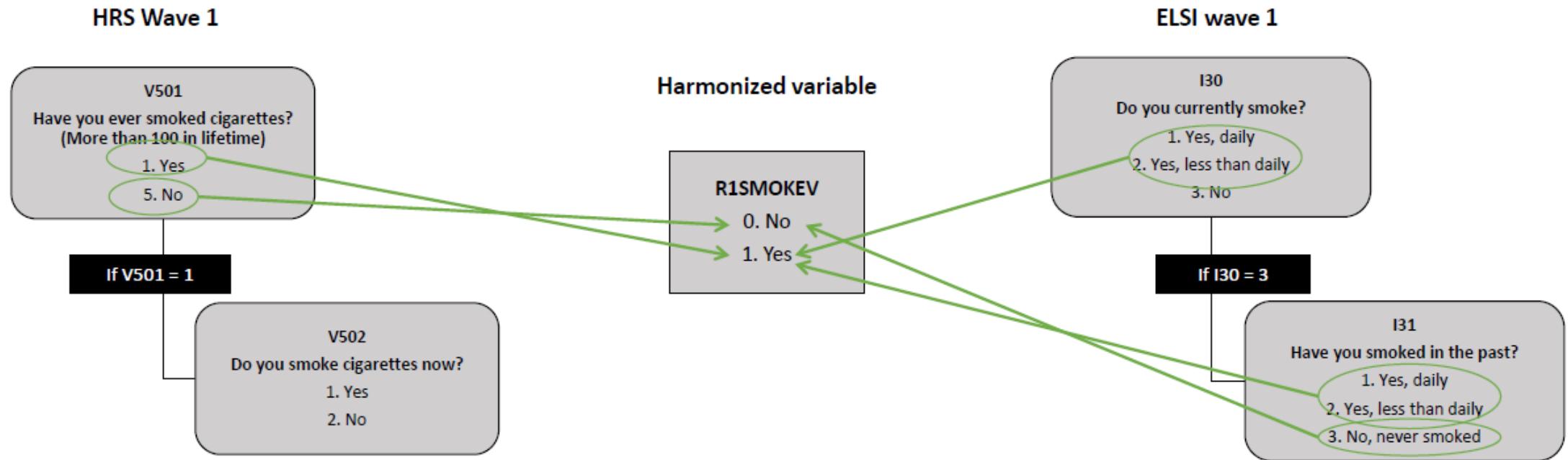
Simple Harmonization between Studies

Harmonized variable name: R1SMOKEV

Harmonized variable label: Wave 1: Has the respondent ever smoked

Harmonized variable codes:

- 0. No, the respondent has never smoked
- 1. Yes, the respondent has smoked



Source: Gateway to Global Aging Data, Produced by the Program on Global Aging, Health & Policy, University of Southern California with funding from the National Institute on Aging (R01 AG030153)

Study Overview	Core Interview		End of Life Interview		Life History		Health Assessment		Self-Completion		HCAP
	HRS	MHAS	ELSA	SHARE	CRELES	KLoSA	JSTAR	TILDA	CHARLS	LASI	MARS
	United States	Mexico	England	20+ European countries & Israel	Costa Rica	Korea	Japan	Ireland	China	India	Malaysia
STUDY OVERVIEW											
Respondent Eligibility											
Age Eligibility	51	50	50	50	Cohort 1: 60 / Cohort 2: 55-65	45	50-75	50	45	45	40
One or all age-eligible	one	one	all	one†	one	all	one	all	one	all	three oldest
Spouse inclusion	regardless of age	regardless of age	regardless of age	regardless of age	Cohort 1: none / Cohort 2: regardless of age	only if age eligible	none	regardless of age	regardless of age	regardless of age	none
Survey											
Method	in-person/ phone/ self-	in-person	in-person/self-	in-person/self-	in-person	in-person	in-person/self-	in-person/self-	in-person	in-person	in-person



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Concordance across surveys

Measure	Question	HRS	MHAS	ELSA	SHARE	KLoSA	CHARLS	LASI
	Diff-bathing	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
	Diff-eating	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1

RwADLFIVE is a 5-item summary of any difficulty with activities of daily living. The activities of daily living included are bathing, dressing, eating, getting in/out of bed, and using the toilet. $RwADLFIVE = \text{sum}(RwBATHA, RwdRESSA, RweATA, RwbEDA, RwtOILTA, RwURINA)$. $RwADLFIVEM$ is the number of ADL questions with missing values. $RwADLFIVE$ is calculated for all respondents who answered at least one of the ADL component questions.

	Diff-dressing	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
	Diff-controlling urination/defecation	-	-	-	-	w1-7	w1-3	-
	Diff-brushing teeth, washing face/hair	-	-	-	-	w1-7	-	-



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Concordance across surveys

Doctor Diagnosed: Ever Have Condition	Diabetes	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
	Cancer, excluding minor skin cancer	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
	COPD, lung disease						w1-3	w1
	Heart problems	heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems	heart attack	infarction or coronary thrombosis), congestive heart failure, a heart murmur, an abnormal heart rhythm, or any other heart trouble.	myocardial infarction or coronary thrombosis, or any other heart problem, including congestive heart failure	having had a heart attack, coronary heart disease, angina, congestive heart failure	heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems	COPD, chronic bronchitis, or other chronic lung problems
	Stroke	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
				cerebrovascular disease	cerebral vascular disease	possible ischemic attack		
	Arthritis or rheumatism	w1-13	w1-4	w1-8	w1-2, w4-7	w1-7	w1-3	w1
		-	-	arthritis, osteoarthritis, rheumatism	w5-w7 rheumatoid arthritis or osteoarthritis/other rheumatism are separate questions	-	arthritis only	

At least one doctor diagnosed disease considered chronic according to CDC.

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Sample Characteristics

Country/Region	Survey	Wave	Number of Observations
USA	HRS	12	18,747
England	ELSA	7	9,666
Korea	KLoSA	5	7,029
China	CHARLS	3	16,344
India*	LASI	1	52,393
Europe**	SHARE	6	66,877
Mexico	MHAS	4	17,616

- Number of Interviews/eligible respondents
- Age >50
- Focus on older ages for decomposition and health expectancy – Age >60
- Non-institutionalized

* Data for India refers to year 2016/2017 and not 2014/2015

** only added in Wave 7 and thus not included in this study: Finland, Lithuania, Latvia, Slovakia, Romania, Bulgaria, Malta and Cyprus.



Source: Gateway to Global Aging Data, Produced by the Program on Global Aging, Health & Policy, University of Southern California with funding from the National Institute on Aging (R01 AG030153)

Methods: disability- and chronic disease-free life expectancy (DFLE/CFLE) with Sullivan (1971)

$$DFLE_x = \frac{\sum_{k=x}^w L_{k+n}^i}{l_x}$$

Mortality data comes from:

1. United Nations
2. ONS for England

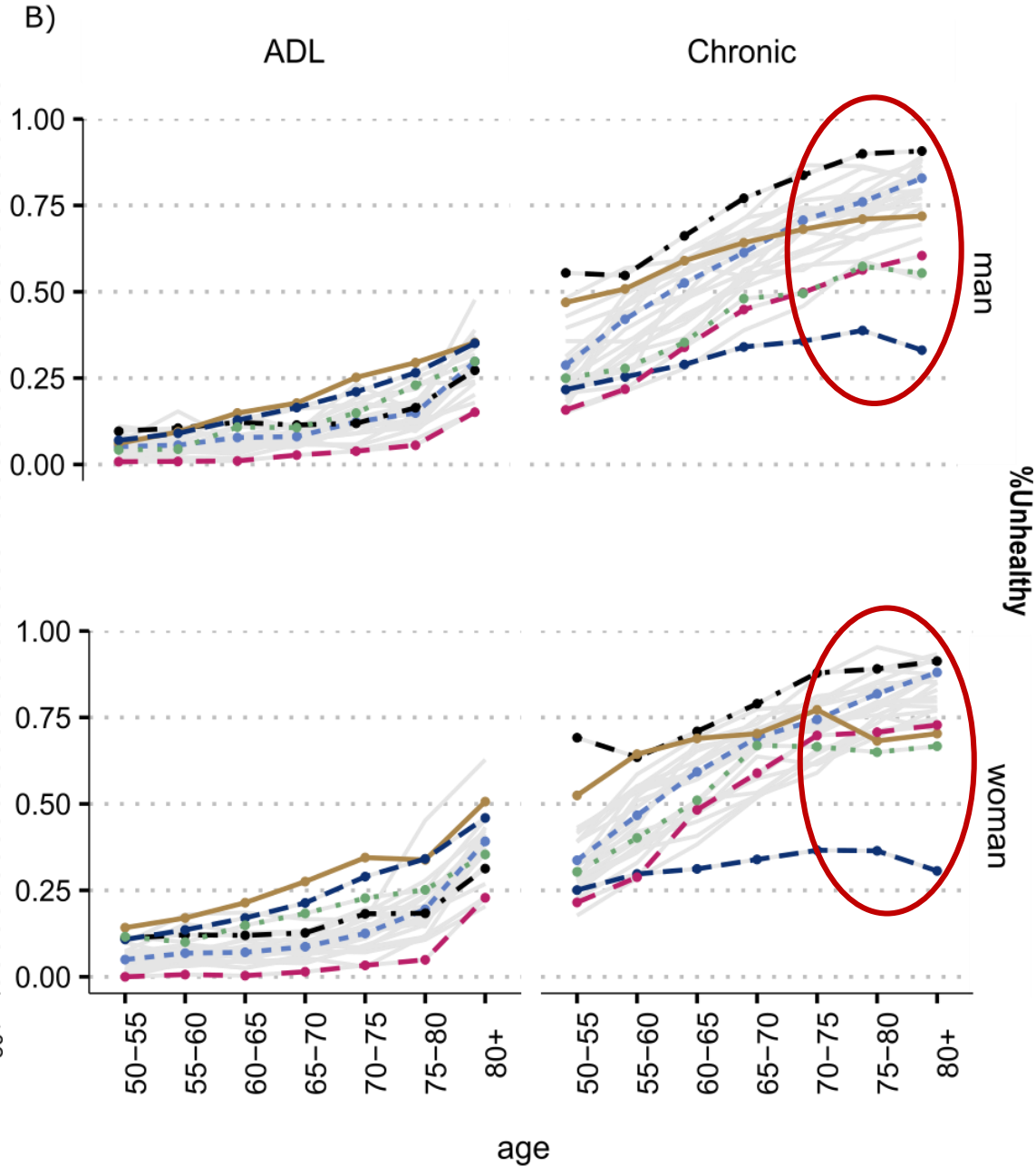
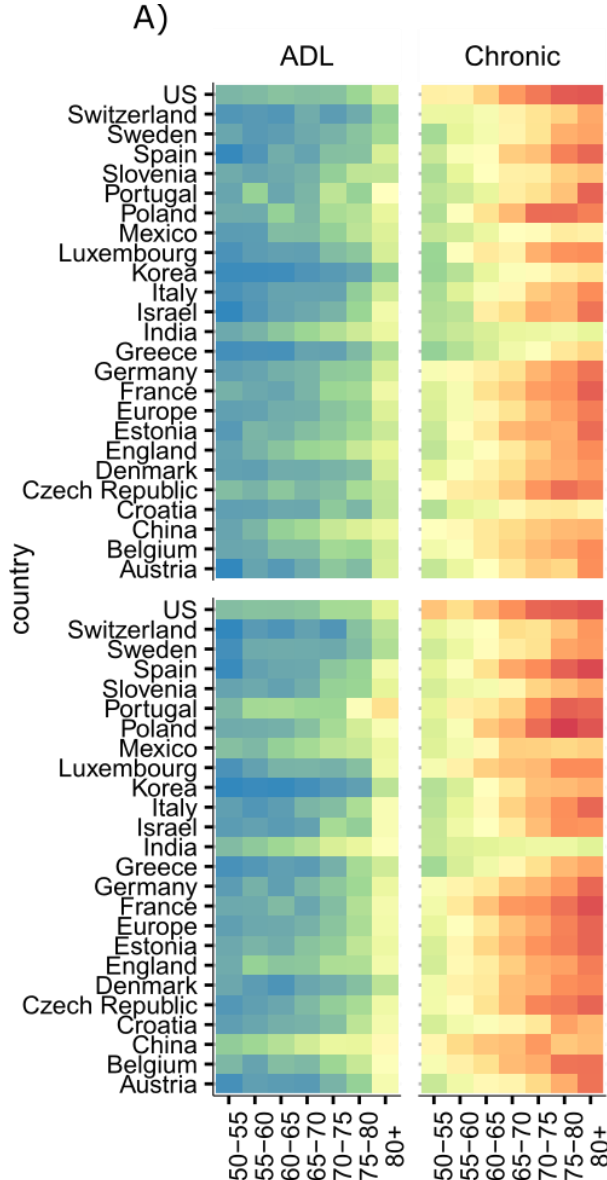
$$\Delta DFLE_x = DFLE_x^{Women} - DFLE_x^{Men}$$

- Continuous change decomposition method (Horiuchi 2008)
- Former application for the case of LAC countries (Nepomuceno, di Lego, Turra 2021)
- **Split the gender gap** in DFLE/CFLE into mortality and disability effects.



Results





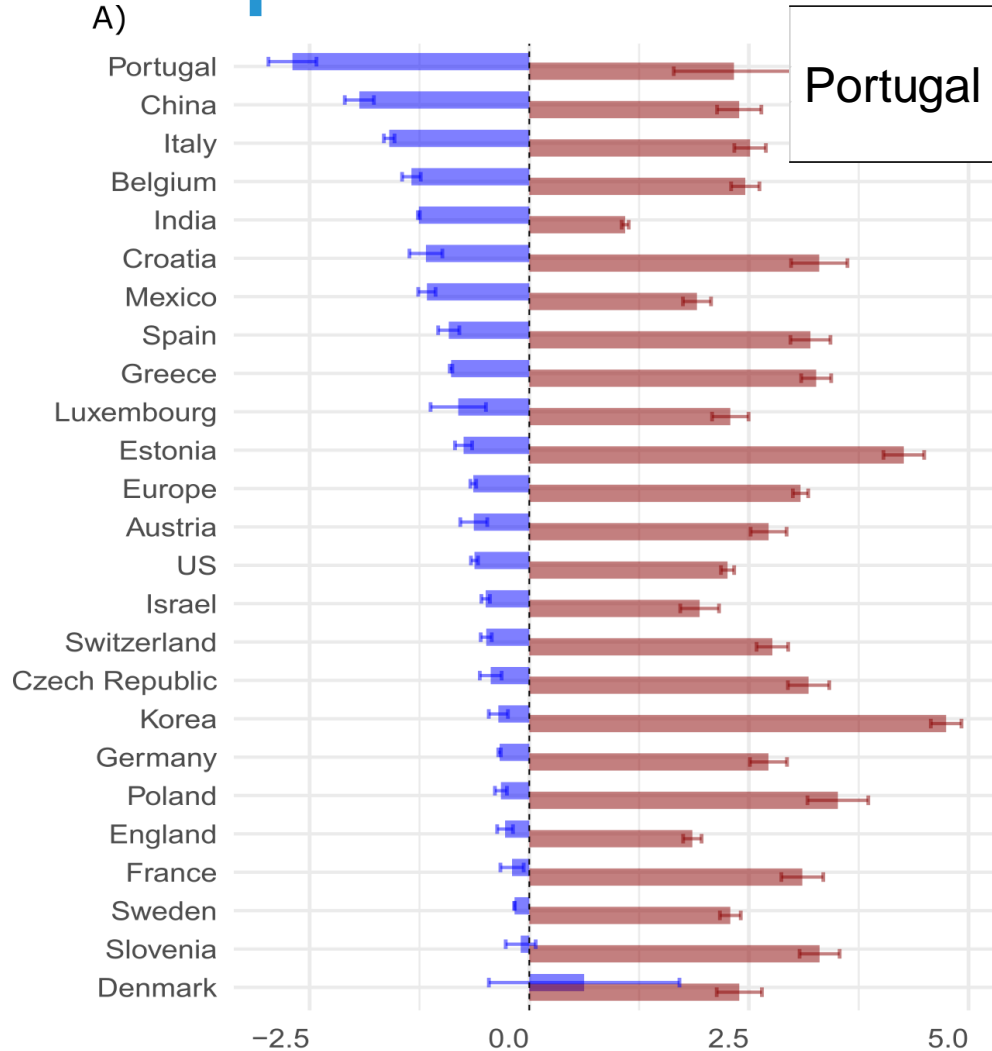
KEY POINTS

- China and India highest prevalence of ADL for women and men
- India lowest for Chronic – indicating issues with diagnosis
- Prevalence higher starting at younger ages for women for ADL
- Chronic “tapering” due to diagnosis?
- Role of heart conditions and arthritis for most countries



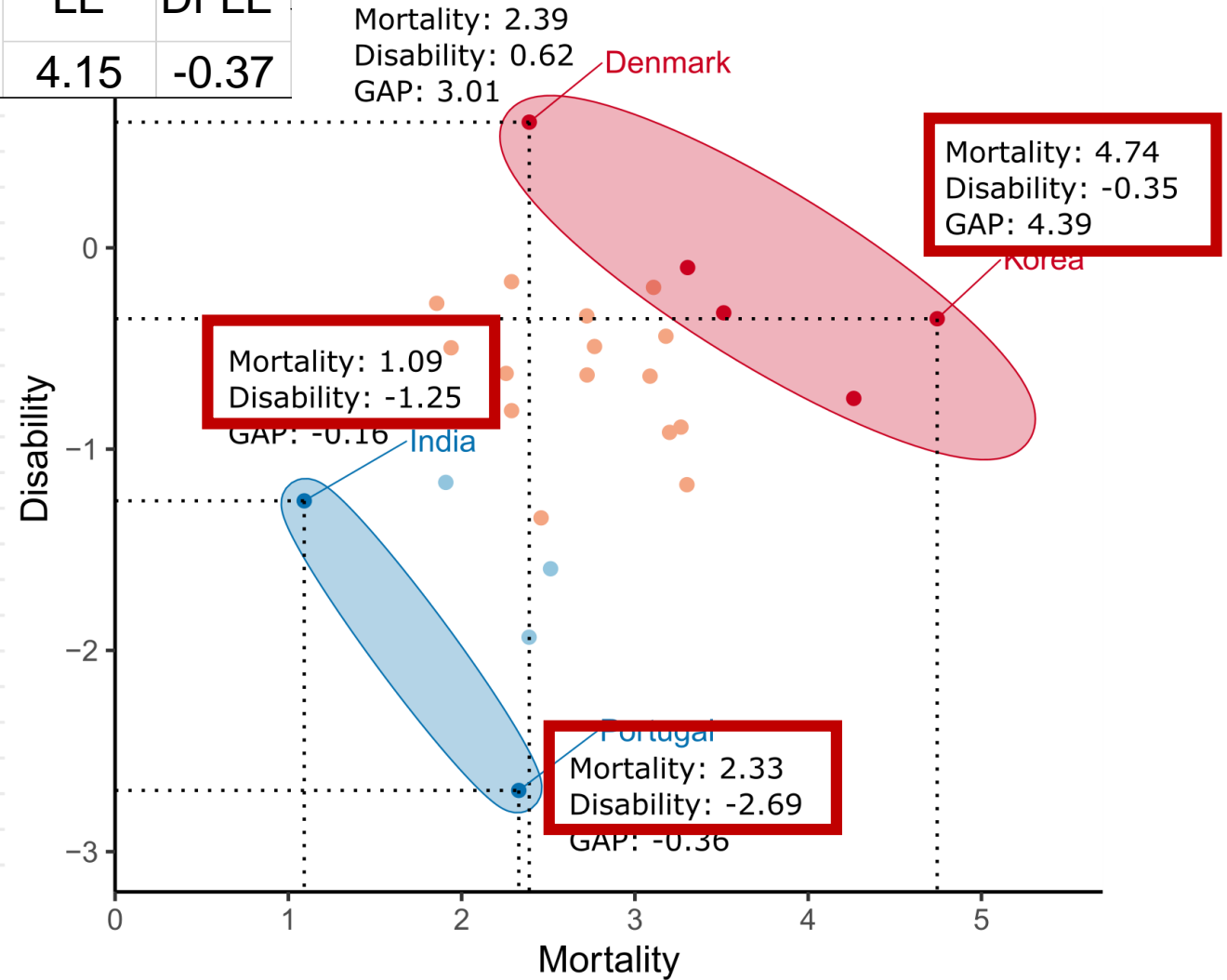
Are Gaps Informative?

A)



Denmark	LE	DFLE
	2.99	3.01

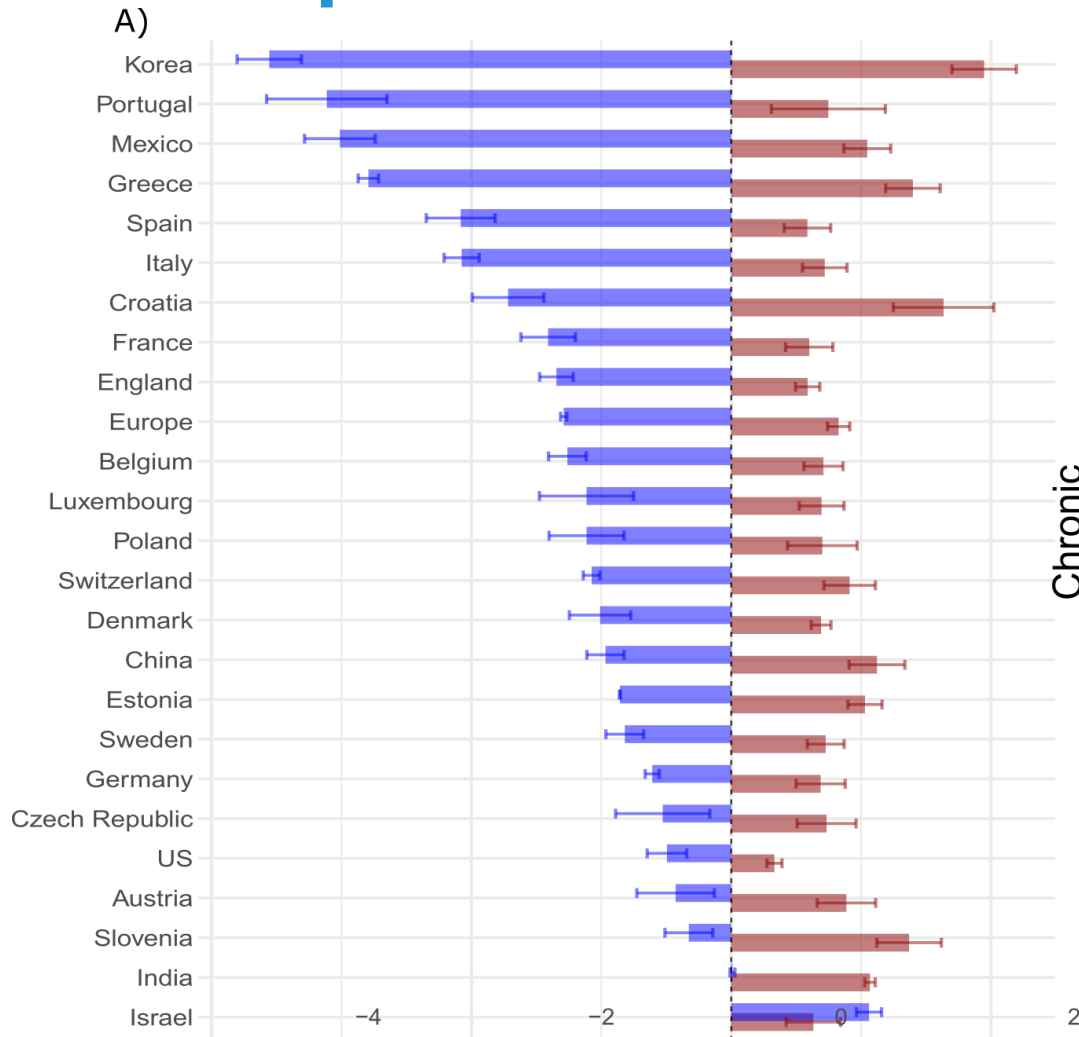
Component Mortality Disability



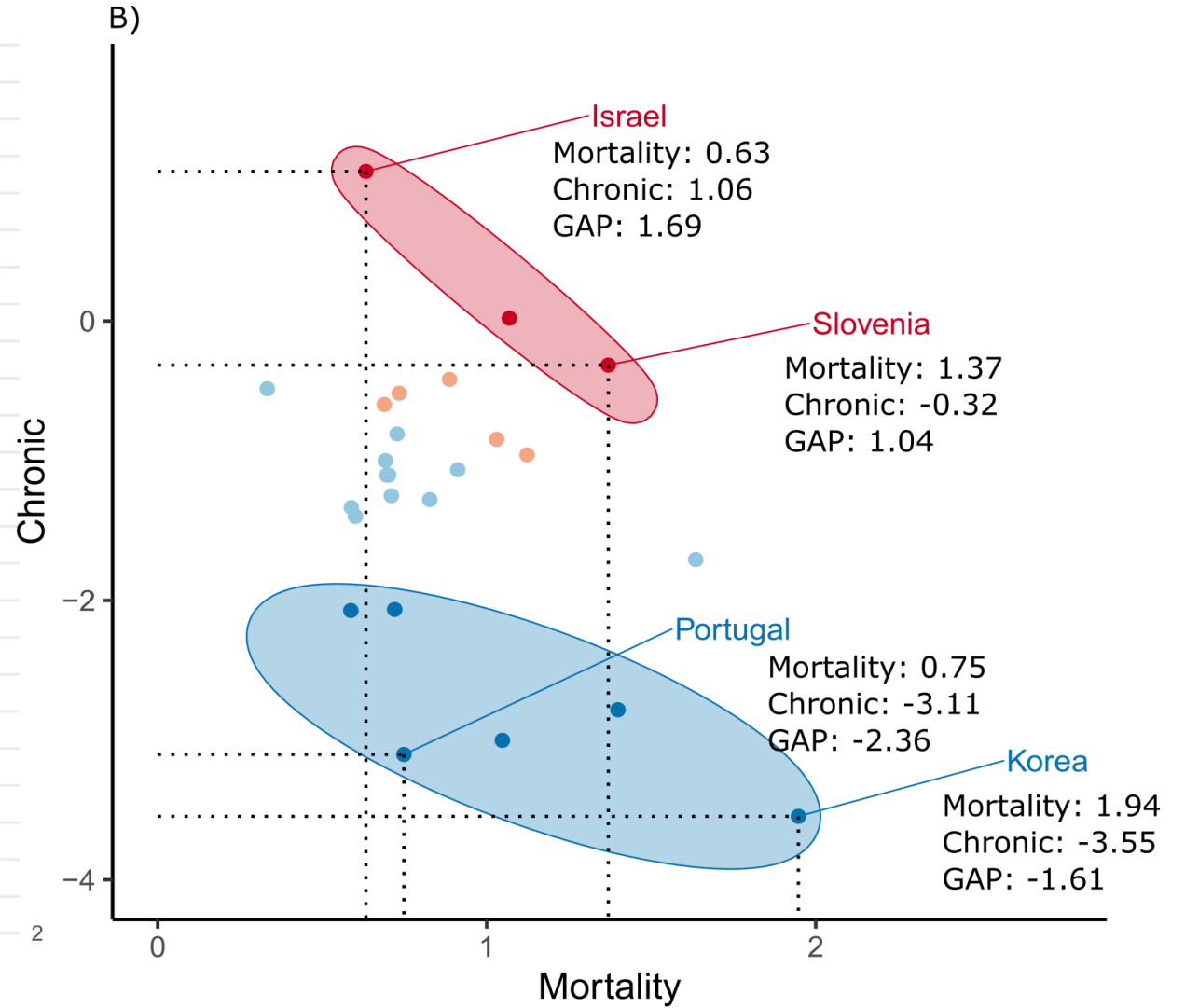
GAP DFLE(years) < 0 0 - 1 1 - 3 3 - 5



Are Gaps Informative?



Component Mortality Chronic



GAP CFLE(years) ■ < -1 ■ -1 - 0 ■ 0 - 1 ■ 1-1.7



Country	LE	DFLE	Components	
			Mortality	Disability
US	2.99	1.63	2.26	-0.62
India	1.63	-0.17	1.09	-1.26
Korea	5.56	4.39	4.74	-0.35
Denmark	2.99	3.01	2.39	0.62
Portugal	4.15	-0.37	2.33	-2.70



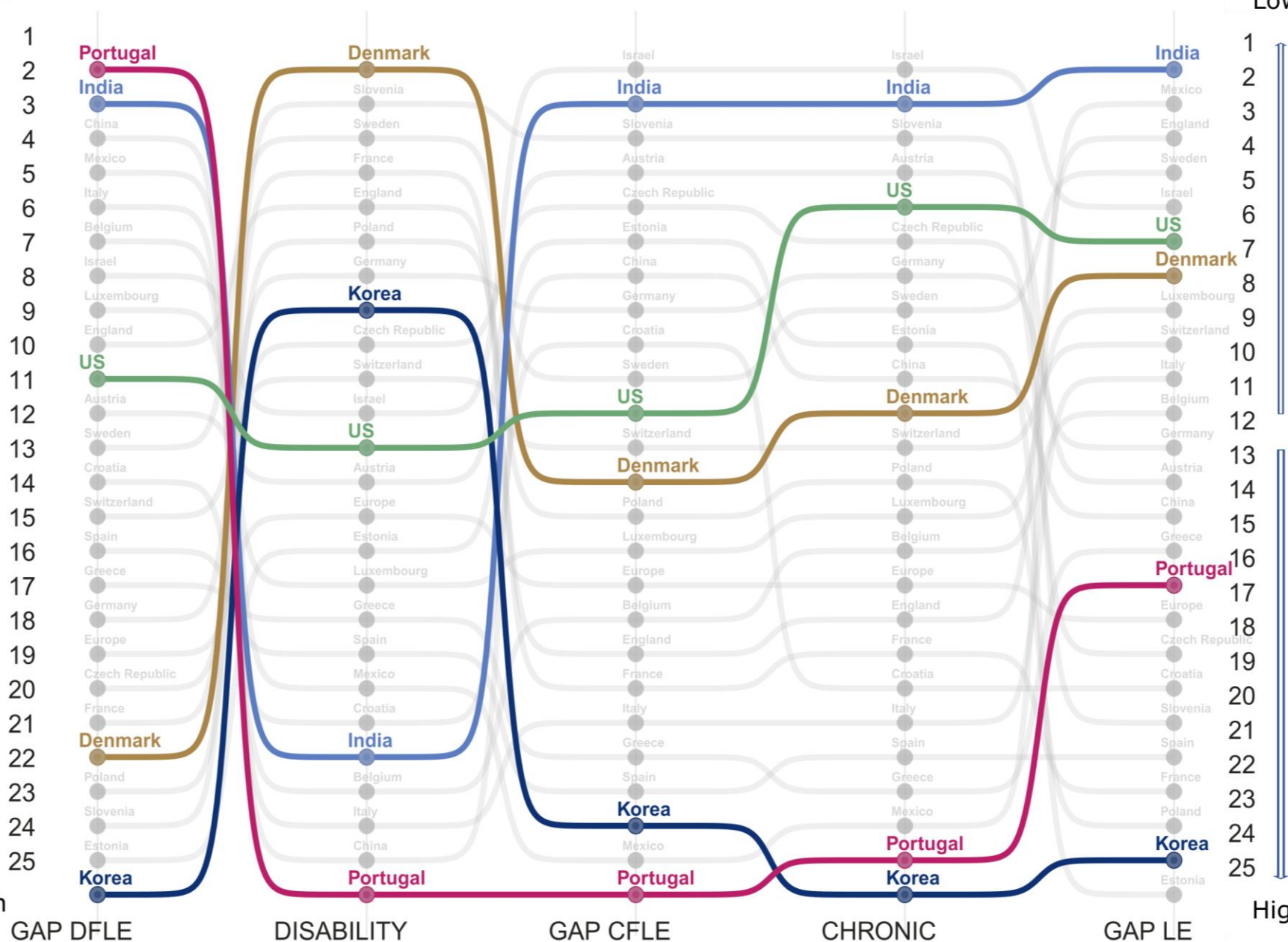
Contrary effects small
gender gap



Low

Rank

High



Low

High

Discussion, Limitations and Caveats

- **CAUTION** when using Gender Gaps in health expectancy as measures of inequality - gaps may indicate disparities but do not tell the whole story - decomposing the gap is key.
- **Health expectancy and life expectancy** (Luy et al. 2020, di Lego & Sauerberg 2023)
- **Cross-country comparisons are challenging but important** to identify patterns and unpack gender differences in health and associations with Welfare State Systems, gender roles, etc. (Nusselder et al. 2010; Robine et al. 2009; Van Oyen et al. 2010; Yokota et al. 2019)
- **!! important to include/analyse other dimensions of health**
- **!!Sensitivity tests with other health variables** and compare different sources for validity (SHARE-SILC for Europe, e.g.)



Thank you!

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Levels and Trends of Health Expectancy: Understanding its Measurement and Estimation Sensitivity



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