WORKING LONGER IN GOOD HEALTH: CHALLENGES AND STRATEGIES

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Newspaper headings: shifting emotions

The default retirement age of 65 has been abolished
ROGER BAMBER

Britons expect to work longer than EU rivals

Rosemary Bennett

Wednesday March 19 2014, 12.00am GMT, The Times

Anna Mikhailova, with her Maltese terrier Wooster, says she needs to save more
AKIRA SUEMORI

There's working late — and then there's working till the age of 70

Anna Mikhailova may have to toil for 50 years before she can retire. So she can sympathise with women whose state pension age keeps shifting

Anna Mikhailova

Sunday May 22 2016, 12.01am BST, The Sunday Times

Fiftysomethings, get out of your gardens: Britain needs you

Sunday May 29 2022, 12.01am BST, The Sunday Times

We have ended up with an employment crisis, with joblessness at its lowest level since 1974
GETTY IMAGES

My current interests

MORE YEARS
BETTER LIVES

The Potential and Challenges of Demographic Change

NL: Suzan Robroek, Alex Burdorf, Merel Schuring, Jolinda Schram
SE: Mia Söderberg, Bengt Järvholm
UK: Mauricio Avendano, Ludovico Carrino

Joint Call 2015 – Project WORKLONG
Impact of interventions and policies on prolonging working life in good health: an international study

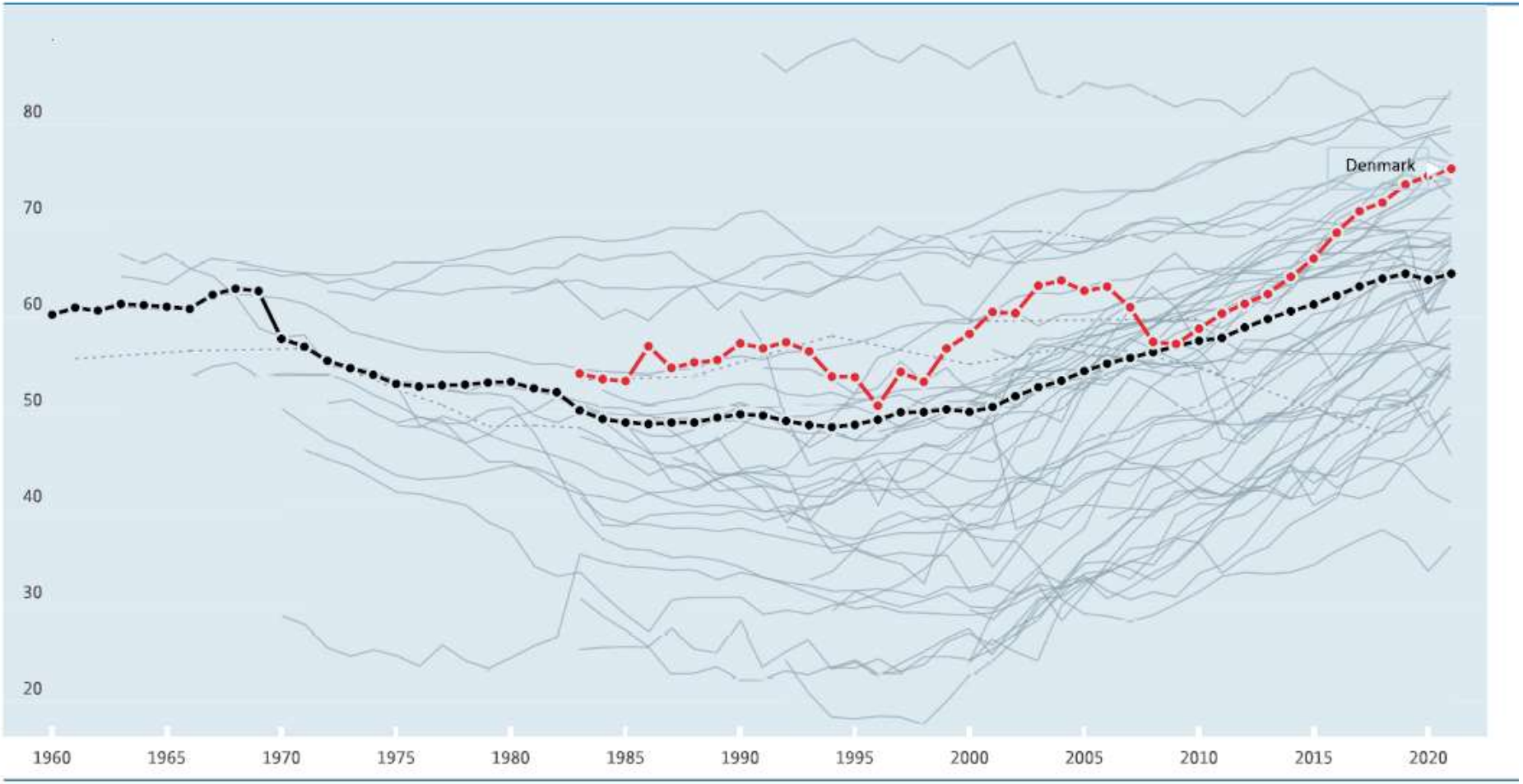
Important questions

1. Who works and how long ?
   * working life expectancy and working years lost
   * impact of policies and legislation on prolonging working life

2. Barriers in maintaining paid employment
   * micro, meso and macro level factors
   * impact of policies and legislation on labour force participation

3. Challenges and future directions
   * trends in work
   * challenges

1. Who works and how long ?



Perspectives

55-64 year-olds ()

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1. Who works and how long ?

Scand J Work Environ Health 2020;46(1):77-84

doi:10.5271/sjweh.3843

Educational differences in duration of working life and loss of paid employment: working life expectancy in The Netherlands

by Robroek SJW, Nieboer D, Järvholm B, Burdorf A

Inspired by: Nurminen et al. Multistate worklife expectancies. SJWEH 2005

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Methods

1. Data availability: data from Statistics Netherlands (SSB, tax registries) in 2001-2015 [education is limiting factor]
   * n=4,999,947 aged 16-66 years
   * n=2,761,301 between 30-66 years

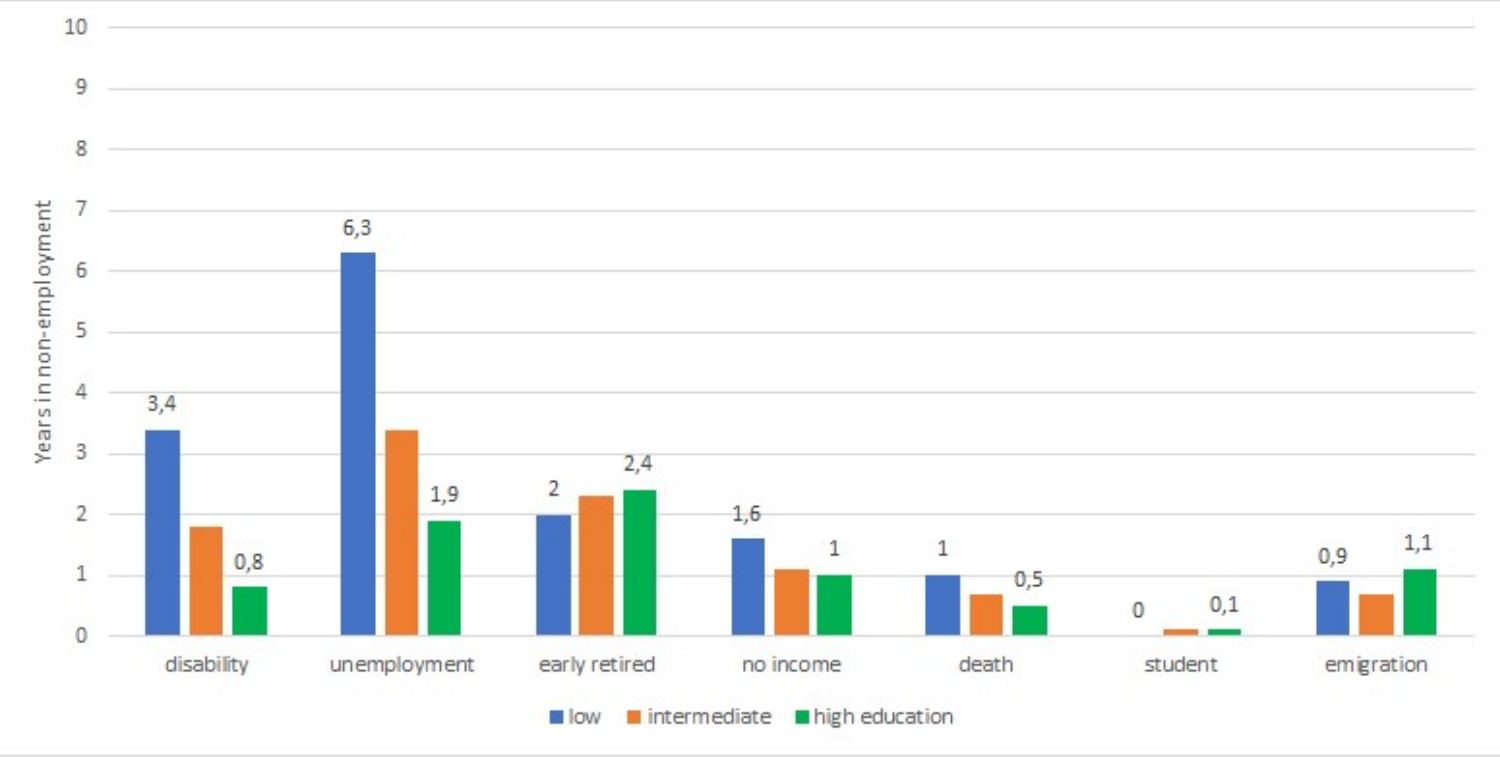
2. Design: Follow-up of 15 years across each age year, starting from16 years until 66 years (statutory retirement)

3. Definition: For each month, (non) employment status based on income that month

4. Analysis: Monthly transition probabilities to estimate the duration in a certain state (Multistate modelling)

How long do we work (lifecourse perspective) ?

Working years lost (M, 30, at work) until 66: Netherlands



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Working life expectancy, from which age?

Table 2. Educational differences in working life expectancy (WLE) between ages 30–66 and 50–66 among men and women in the Dutch workforce, given being in paid employment at the starting age. [CI=confidence interval.]

	WLE at age 30 (95% CI)	WLE at age 50 (95% CI)
Men		
Low	20.9 (20. 9–21.0)	8.4 (8.3–8.4)
Intermediate	26.0 (25.9–26.0)	9.8 (9.8–9.8)
High	28.2 (28.2–28.2)	10.9 (10.9–10.9)
Difference (high-low)	7.3	2.5
Women		
Low	16.9 (16.8–16.9)	7.0 (7.0–7.0)
Intermediate	23.7 (23.7–23.8)	9.1 (9.0–9.1)
High	26.8 (26.7–26.8)	10.4 (10.4–10.4)
Difference (high-low)	9.9	3.4

	WLE at age 16 (95% CI)
Men	
Low	29.2 (29.1-29.4)
Intermediate	34.2 (34.1-34.4)
High	33.4 (33.3-33.5)
Difference (High-Low)	4.2
Women	
Low	23.0 (22.5-23.3)
Intermediate	31.2 (31.1-31.4)
High	32.5 (32.4-32.6)
Difference (High-Low)	9.5

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Working life expectancy; debate

1. Lower educated persons have shorter working careers than higher educated workers, although they enter the labour market at much earlier age

2. Differences in disability and unemployment (involuntary exit routes) largely explain the educational differences in working careers

3. Loss of paid employment is an important cause of socio-economic health inequalities (one of the biggest societal challenges)

4. Lower labour force participation has economic impact; less productivity
   (the notion that we all work at least 40 years is completely wrong)

Working life expectancy; vulnerable groups

Workers with a chronic disease

Working Years Lost in Norway (Knudsen et al. PLoS One 2012):

- Mental and behavioural disorders: 20.9 yrs
- Musculoskeletal disorders: 12.0 yrs
- Cancers: 11.6 yrs

Working life expectancy in Denmark (Pedersen et al. Occup Environ Med 2019):

- a 40-year old woman with depressive symptoms can expect 3.3 years less in work, 0.8 years more in unemployment and 0.7 years more in sickness absence

Working life expectancy; vulnerable groups

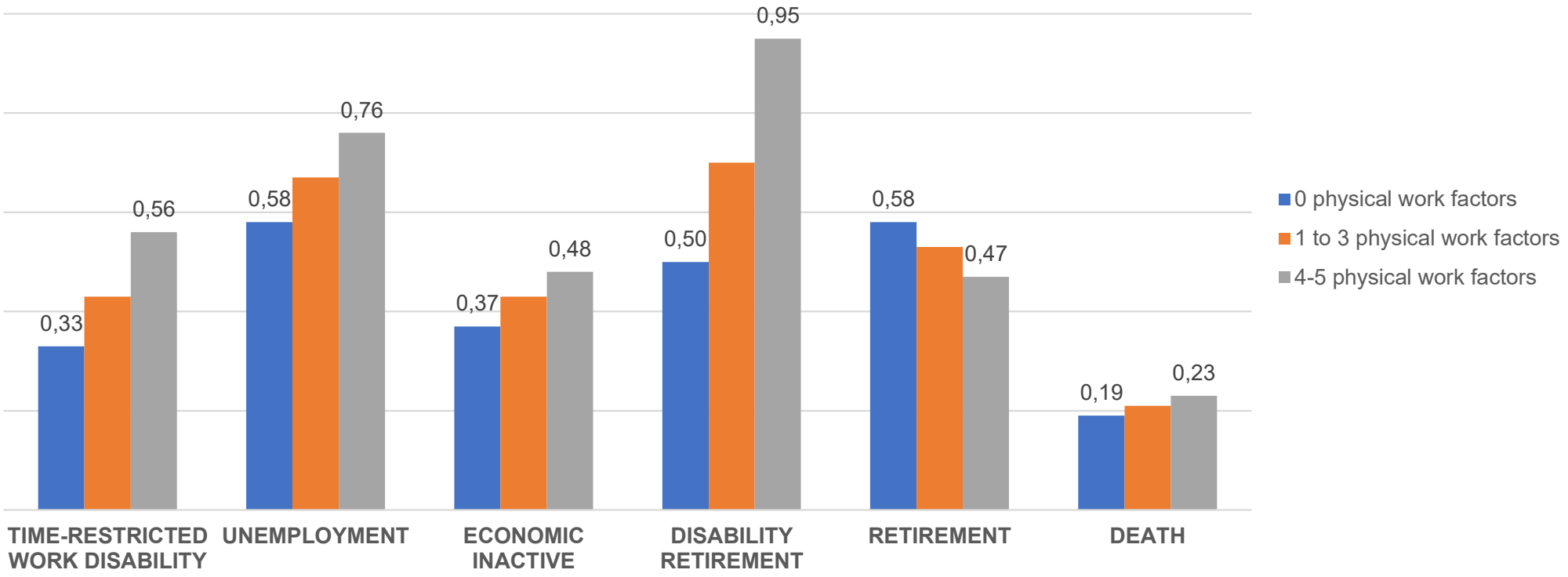
Workers in strenuous jobs

Working Years Lost in Finland (Schram et al. Scand J Work Environ Health 2021):

- High physical work load: between 50-63 years about 1 working year lost
- Involuntary exit most important

How long do we work (lifecourse perspective) ?

Working years lost (M, 50, at work) until 63: Finland



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Working life expectancy; vulnerable groups

Workers in strenuous jobs

Working Years Lost in Finland (Schram et al. Scand J Work Environ Health 2021):

- High physical work load: between 50-63 years about 1 working year lost

Working years lost in Denmark (Pedersen et al. Occup Environ Med 2020):

- At age 30 years, women with high physical work demands can expect 3.1 years less working, 11 months more of sickness absence and 16 months more of unemployment than low-exposed women.
- For 30-year-old men, the corresponding results were 2.0 years, 12 months and 8 months, respectively.

➔ large potential for investment in prevention strategies

Natural experiments on postponing retirement

Original article

Scand J Work Environ Health 2021;47(3):224-232

doi:10.5271/sjweh.3946

Effects of changes in early retirement policies on labor force participation: the differential effects for vulnerable groups

by Oude Hengel KM, Riumallo-Herl C, Schram JLD, Nieboer D, van der Beek AJ, Burdorf A

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Natural experiments on postponing retirement

Natural experiment:

* abolishment of favourable tax deductibility towards retirement schemes from Jan 1, 2006 for all workers born in 1950 or later

Study design:

* regression discontinuity design: individuals just above or just below the threshold can be compared
* comparison of birth cohorts 1948 & 1949 with 1950 & 1951
* assumptions:
  - the date of change is completely exogenous variation for those in its vicinity
  - individuals cannot manipulate the intervention (e.g. change date of birth!)

Natural experiments on postponing retirement

Consider these twin brothers

Harry: born 23:48 at Dec 31, 1949

Larry: born 00:05 at Jan 1, 1950

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Natural experiments on postponing retirement

Study population:

* participants in the Dutch Labour Force Survey 2003-2009, stratified random sample of 1% of population in the Netherlands
* information on work, health, and demographics every 3 months for 1 year
* enriched with tax register (sources of income)

Statistical analysis:

* survival analysis with competing risk for different exit routes
* measure of interest: restricted mean survival time
* sensitivity analysis with bandwith (period around the intervention)

Natural experiments on postponing retirement

Table 1. Characteristics of study population (N=14 190)

		Control group n=7115		Intervention group n=7075	
		n	%	n	%
Year of Birth	1948	3542	49.8		
	1949	3573	50.2		
	1950			3611	51.0
	1951			3464	49.0
Educational level	Low	2268	31.9	2056	29.1
	Inter	2623	36.9	2749	38.9
	High	2224	31.3	2270	32.1
Gender	Male	4367	61.4	4121	58.2
Having a partner	Yes	6101	85.7	6047	85.5
Chronic disease	0	3510	49.3	3616	51.1
	1	2317	32.6	2258	31.9
	≥2	1288	18.1	1201	17.0
Labour force exit before the age of 65					
Early retirement		3942	55.4%	2100	29.7%
Disability benefits		216	3.0%	278	3.9%
Unemployment		489	6.9%	989	14.0%
Economic inactive		534	7.5%	595	8.4%
Death		109	1.5%	107	1.5%

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Natural experiments on postponing retirement

Table 2. Regression discontinuity (RD) estimates of working months and months in different exit pathways from paid employment comparing the intervention to the control group as reference [a]. Significant results (P-value <0.05) are presented **in bold**.

	Addition months spent in paid employment		Working months lost due to early exit through [b]							
			Early retirement		Disability benefits		Unemployment		Economic inactivity	
	Months	95% CI	Months	95% CI	Months	95% CI	Months	95% CI	Months	95% CI
All [c]	**4.87**	**3.60–6.24**	**-7.41**	**-8.72–-6.11**	0.47	-0.07–1.01	0.61	-0.23–1.44	0.51	-0.20–1.21
Gender [d]										
Female	2.09	-0.09–4.26	**-5.63**	**-7.60–-3.65**	0.28	-0.57–1.13	**1.50**	**0.30–2.71**	0.74	-0.77–2.24
Male	**6.75**	**5.00–8.51**	**-8.51**	**-10.23–-6.80**	0.52	-0.19–1.23	0.26	-1.23–1.06	0.32	-0.23–0.87
Income (€) [e]										
≤25 000	**3.35**	**0.58–6.12**	**-5.82**	**-8.20–-3.45**	0.26	-0.84–1.36	0.32	-1.35–1.99	-0.05	-2.25–2.15
25 000–40 000	**5.07**	**2.24–7.90**	**-8.08**	**-10.86–-5.30**	1.19	-0.07–2.43	0.15	-1.68–1.98	**1.24**	**0.31–2.18**
40 000–55 000	**4.41**	**1.59–7.23**	**-7.09**	**-9.87–-4.32**	0.99	-0.21–2.19	0.94	-0.82–2.70	0.45	-0.34–1.23
≥55 000	**6.32**	**3.79–8.84**	**-7.98**	**-10.38–-5.59**	-0.37	-1.17–0.44	1.04	-0.42–2.50	0.22	-0.66–1.10
Chronic disease [f]										
No	**5.70**	**3.76–7.65**	**-7.02**	**-8.85–-5.20**	0.23	-0.88–0.42	-0.30	-1.48–0.88	0.75	-0.19–1.69
One	**3.45**	**1.02–5.88**	**-6.86**	**-9.19–-4.53**	0.86	-0.14–1.86	1.29	-0.23–2.81	0.38	-0.89–1.65
Multiple	**4.99**	**1.77–8.20**	**-9.12**	**-12.14–-6.10**	1.85	-0.17–3.54	**1.99**	**0.06–3.92**	0.30	-2.06–1.47

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Changes in legislation as natural experiment

Effects on introduction of Disability Acts

United Kingdom: a quota system for hiring persons with disabilities (Lysaght et al. Work 2012)

* No increase in employment in target group

USA: Americans with Disabilities Act (Maroto et al. Disabil Stud Quart 2015)

* Evidence points towards increasing disparities

Netherlands: Participation Law in 2015 (SCP 2019)

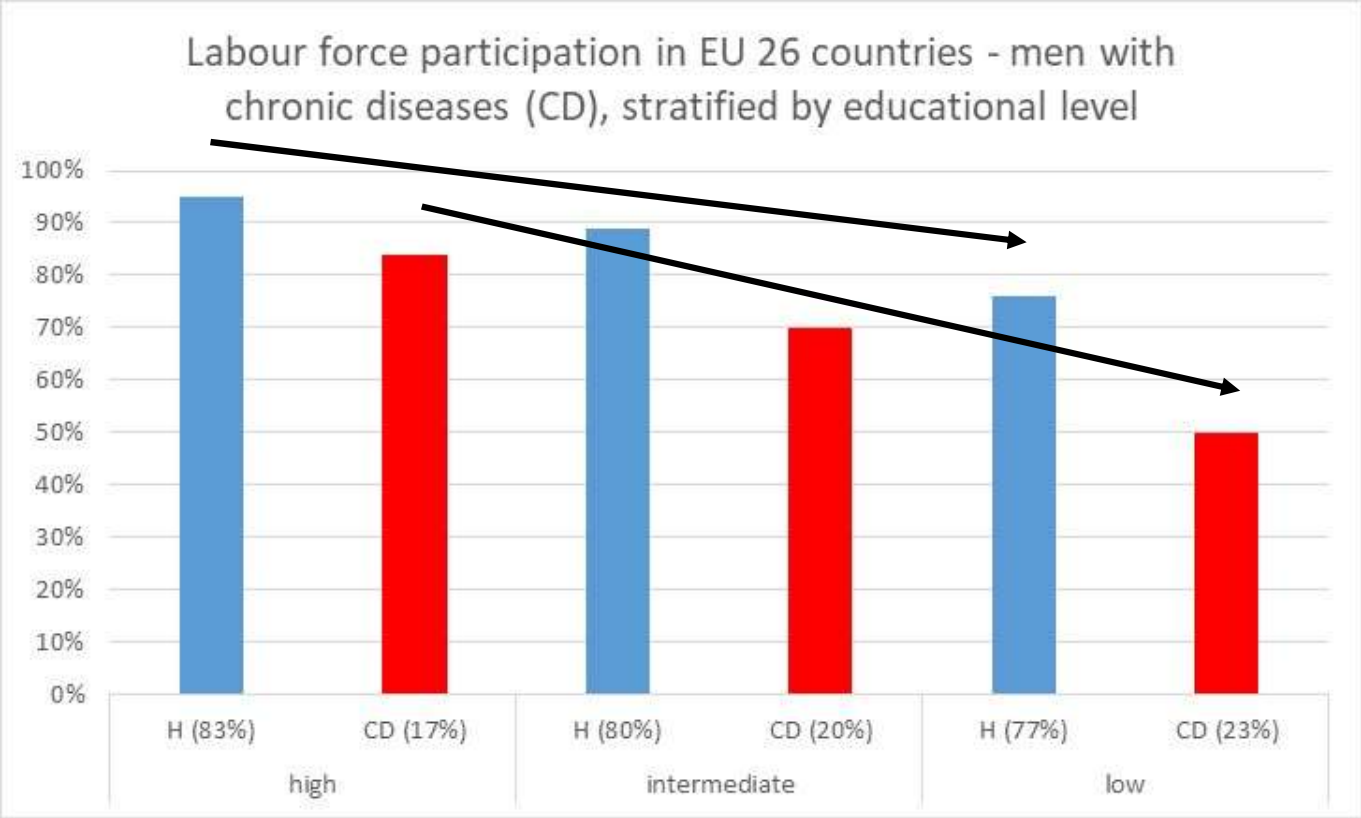
* Persons with handicap: 39% in paid employment within 4 years, previously 55%

Take home message 1:

* Labour force participation among 55+ has increased sharply in Europe in the past 15 years; for most workers, working longer is not a problem
* Large educational differences in duration of working careers, which suggests it will be more difficult for lower educated workers to stay in paid employment until higher age of retirement
* Workers with chronic disease and in strenuous jobs will lose working years due to disability benefit and unemployment, but not through early retirement
* Natural experiments evaluations suggest that working longer comes at a certain price: more disability and more unemployment at older age, especially in vulnerable groups

What is acceptable from a societal perspective ?

2. Barriers in maintaining paid employment



Reasons?

- Individual ?
- Work and workplace ?
- National context ?

[selection or causation ?]

Schram et al. BMJ Open 2019; Schuring et al Scand J Work Environ Health 2019

2. Barriers in maintaining paid employment

Table 2. The proportion of exit from paid employment into disability benefits that can be attributed to poor health among lower-, intermediate-, and higher educated workers in five European regions of a rotating panel (EU-SILC) with a maximum follow-up period of three years (2005–2014).

Level of education	Disability benefits			
	Per 1000 person years	Relative inequality (95% CI)	Poor health HR (95% CI)	Population attributable fraction
Northern region		3.33 (2.50–4.44)		
Lower	12.8		5.36 (3.55–8.09)	0.49 (0.37–0.61)
Intermediate	7.4		4.44 (3.39–5.81)	0.41 (0.33–0.50)
Higher	3.9		5.58 (3.73–8.33)	0.35 (0.24–0.46)

Table 3. The proportion of exit from paid employment into unemployment that can be attributed to poor health among lower-, intermediate-, and higher educated workers in five European regions of a rotating panel (EU-SILC) with a maximum follow-up period of three years (2005–2014).

Level of education	Unemployment			
	Per 1000 person years	Relative inequality (95%CI)	Poor health HR (95%CI)	Population attributable fraction
Northern region		2.56 (2.16–3.03)		
Lower	32.4		1.73 (1.30–2.31)	0.12 (0.05–0.18)
Intermediate	22.5		1.90 (1.59–2.26)	0.12 (0.08–0.16)
Higher	12.6		1.74 (1.29–2.34)	0.07 (0.03–0.12)

Schuring et al. SJWEH 2019;45:346-55

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2. Barriers in maintaining paid employment

Educational inequalities in labour force participation

	disability benefit	unemployment	early retirement
Poor health	36 - 40%	9 - 12%	0 - 3%
Unhealthy behaviour	31 - 54%	21 - 36%	13 - 14%
Working conditions	12 - 30%	2 - 6%	0%

Educational Inequalities in Exit from Paid Employment among Dutch Workers: The Influence of Health, Lifestyle and Work

Suzan J. W. Robroek[1]*, Anne Rongen[1], Coos H. Arts[2], Ferdy W. H. Otten[2], Alex Burdorf[1], Merel Schuring[1]

PLOsOne 2015;10;e0134867

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2. Barriers in maintaining paid employment

Panel 2: Examples of barriers and facilitators in paid employment among individuals with a chronic disease

Personal characteristics (micro level)

Barriers: Functional limitations, pain, tiredness, comorbidity, living alone

Facilitators: resilience, motivation, self-efficacy, adequate coping strategy, support

Workplace (meso level)

Barriers: Physical work load, low job autonomy, high psychological job demands, effort-reward imbalance.

Facilitators: support from colleagues, support form supervisor,

Employer (meso level)

Barriers: fixed working hours, lack of return to work programmes,

Facilitators: Home-working flexibility, job and workplace adaptations, organizational justice, availability of transportation

Institutional arrangements (macro level)

Barriers: high benefit payments

Facilitators: Employment protection, active labour market programmes

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Changes in legislation as natural experiment

Does reduced employment protection increase the employment disadvantage of workers with low education and poorer health?

Merel Schuring,[1] Suzan J W Robroek,[1] Ludovico Carrino,[2] Anouk C O'Prinsen,[1] Karen M Oude Hengel,[1,3] Mauricio Avendano,[4,5] Alex Burdorf[1]

J Epidemiol Community Health 2020;**74**:851–857.

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Changes in legislation as natural experiment

Economic crisis and policy response as natural experiment

* OECD indicator for employment protection (score 0 – 6)
* study design that quantifies the changes in employment protection on the probability to exit paid employment *within* countries
* for each year between 2003 – 2013 a representative sample of employed persons was followed for one year, after change in employment protection

Dataset:

* EU Statistics on Income and Living Conditions (EU-SILC) in 23 countries
* 4 year rotating cohort study with questionnaires every year, age 29 – 59
* employment staus as independent variable
* change in OECD indicator as ‘intervention’
* self-rated health as dependent variable
* adjustment for education, sex, gross domestic product, year

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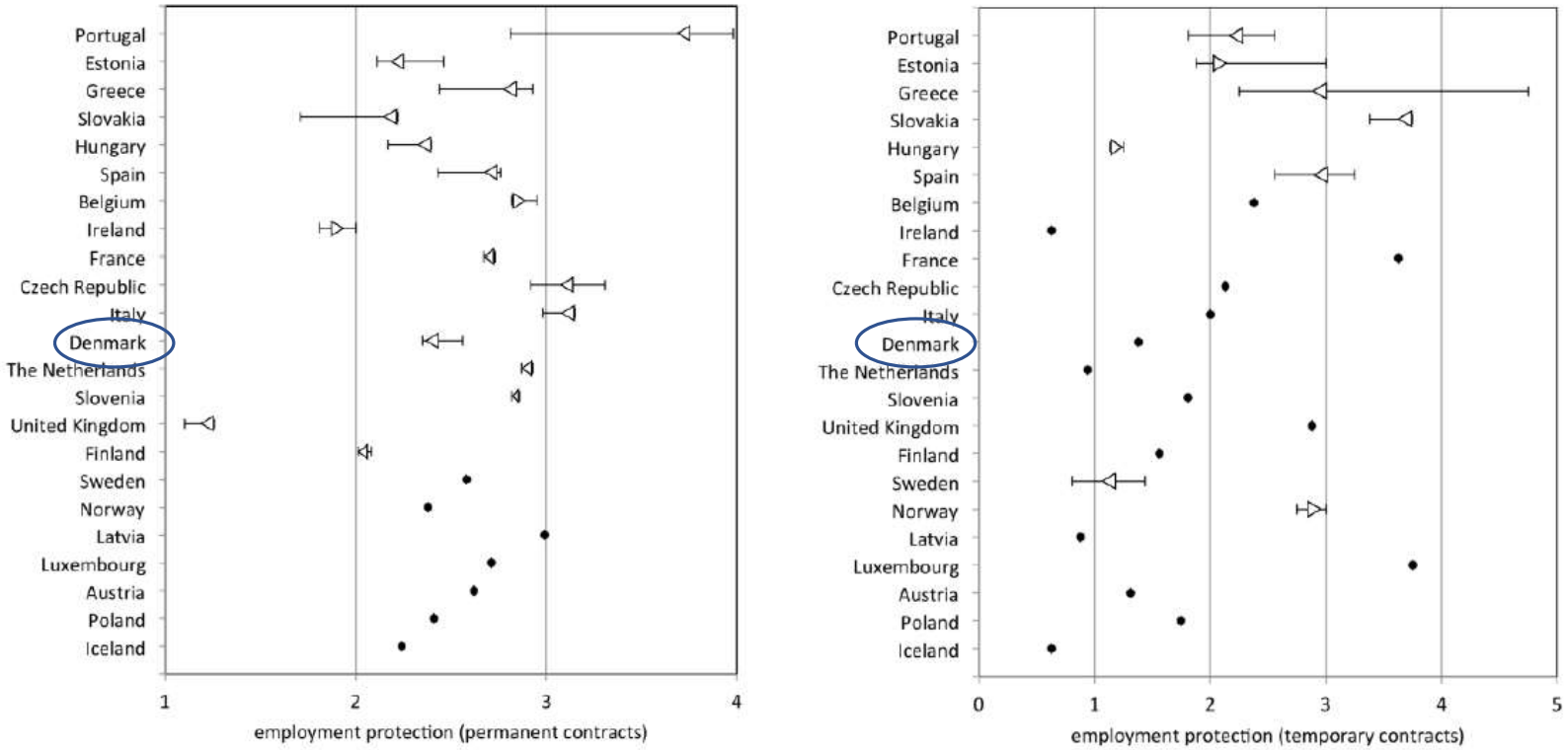
Changes in legislation as natural experiment

Figure 1 Change in employment protection level in 23 European countries between 2003 and 2014



A decrease (◁), an increase (▷), or no change (●) in employment protection level in European countries. The largest decrease in employment protection of permanent workers was found in Portugal (from 4.0 to 2.8), whereas the largest decrease in employment protection of temporary workers was found in Greece (from 4.8 to 2.3).

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Changes in legislation as natural experiment

Table 2 The association between change in employment protection and pathways out of paid employment among employed persons in good or poor health in 23 European countries of a rotating panel (EU-SILC) between 2003 and 2014

	Exit from paid employment				
	Unemployment	Early retirement	Disability	Economic inactivity	All pathways
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Decrease in employment protection of permanent workers					
Among workers in good health	0.85 (0.70-1.04)	2.58 (2.00-3.32)	1.15 (0.65-2.00)	1.24 (0.95-1.61)	1.16 (1.02-1.32)
Among workers in poor health	0.99 (0.81-1.22)*1	4.46 (3.46-5.75)*2	1.69 (0.98-2.91)*3	1.15 (0.89-1.50)	1.52 (1.33-1.73)*4
Decrease in employment protection of temporary workers					
Among workers in good health	1.36 (1.21-1.53)	6.15 (4.86-7.78)	1.29 (0.92-1.83)	1.02 (0.88-1.19)	1.56 (1.44-1.69)
Among workers in poor health	1.40 (1.24-1.57)	6.42 (5.08-8.11)	1.39 (0.99-1.95)	0.92 (0.78-1.08)	1.63 (1.50-1.78)*5

* Significant interaction employment protection permanent workers*poor health ($p<0.05$):
1:OR=1.17 (1.07-1.27); 2:OR=1.73 (1.55-1.93); 3:OR=1.48 (1.22-1.79); 4:OR=1.31 (1.24-1.38)
* Significant interaction employment protection temporary workers*poor health ($p<0.05$); 5:OR=1.05 (1.01-1.09)

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Take home message 2:

* Poor health, strenuous working conditions, and unhealthy behaviour are important barriers in entering and maintaining paid employment

* Current evidence is scattered, not well eveloped. Most studies focus on risk factors (barriers), few on facilitators for maintaining paid employment

* Flexibilisation of the labour market disproportionately increases the risk of early exit from paid employment for workers with temporay contracts, for workers with poor health (and also workers with lower education – *not shown*)

* My prediction: reduced access to paid employment for vulnerable groups will increase health inequalities

3. Challenges and future directions

Trends in work:

1. Increase in flexible labour contracts, esp among lower AND higher educated (>25%)
2. Platform/gig economy (uber, maintenance, construction, delivery); job insecurity
3. Increasing complexity of jobs (“from 2 to 7 tasks”)
4. Technological developments (simple jobs will disappear)
5. From substitution (robotics) to complementarity (interplay humans and robotics)

How will this affect health at work and work for those with health problems ?

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3. Challenges and future directions

Trends in work:

6. Work-life balance becomes more important; risks and opportunities

7. From physically strenuous jobs to mentally strenuous jobs
   [even in construction industry]

8. Organisation of work will determine migration patterns

9. Decent work and fair payment will become a ‘battlefield’: prevention opportunities

How will this affect attractiveness of employers ?

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3. Challenges and future directions

Challenges:

1. With higher retirement age
   * larger educational differences in loss of paid employment, esp. at older age
   * larger socio-economic health inequalities

2. Access to paid employment for those with health problems will most likely deteriorate, rather than improve (despite all efforts)

3. In prolonging worklife working conditions, health promotion and (health) management are crucial, interlinked factors;

   rapid integration of occupational health, ergonomics, safety, HR

   increased attention in clinical care and public health for work

3. Challenges and future directions

4. We need a shift from risk factor approach to enabling factors in occupational health: more focus on prevention strategies
   [in order to support and increase ability to remain employed]

5 Design of the future workplaces: health promotion, supportive environment, inclusive labour market

6. Precarious employment: economy vs decent work

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