

Associations between heart attack, stroke, arthritis and disability levels in Europe

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Motivation

- ▶ Life expectancy on rise in Europe, technological achievements have reduced fatality of previously fatal chronic diseases
- ▶ Not clear evidence whether the concept of morbidity shrinking is hand in hand with reduced fatality or *vice versa*
- ▶ Not clear evidence whether disability is increasing or decreasing due to the change in fatal chronic diseases

Motivation (cont.)

- ▶ Manifestation of cardiovascular revolution brings along at first divergencies across Europe, but convergence is expected in the long run (Vallin, Mesle 2004)
- ▶ In East European countries, LE lower, mortality rates of fatal chronic diseases higher, lowest HLYs, but recovery expected



Main aim

- ▶ Estimate prevalences of 3 most disabling chronic diseases across Europe
- ▶ As fatality reduces for younger old adults, it is expected that they would demonstrate higher disability levels (Christensen et al. 2009)
- ▶ Compared to 4 welfare regimes: assess the similarities and divergencies of 5 East Europe countries – to study the impact of social care regimes in association of the 3 disabling chronic diseases



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Data and methods

- ▶ SHARE 4th wave data for 16 countries used- cross-sectional - Nordic (SE, DK, NL), Francophone (FR, BE), German-speaking (AT, CH, DE), Southern (IT, ES, PT) and 5 East European countries (CZ, PL, SI, HU, EE)
- ▶ Old age disability- 3 scales (basic [toileting, dressing, eating and transferring], medium [bathing, walking, housework, meal preparation, shopping and walking outside], complex [handling money, phone use and self-medicating]) based on ADL, IADL (Thomas et al 1998)
- ▶ Confounding risk factors for heart attack and stroke are taken into account – hypertension, high blood cholesterol, diabetes, co-morbidities



Data and methods

- ▶ Risky health behaviour taken into account - smoking, physical inactivity, nutrition habits
- ▶ Confounding risk factor for arthritis - fractures
- ▶ Logistic regression in 3 scales of disability of each chronic disease separately for men and women in relation to Scandinavian region
 - ▶ We think it is much more likely that the different policies and levels of spending influence the groups with and without conditions differently. In a given region there are people who have a condition and underlying certain risk of being disabled. This risk might – or might not – be different from the risk of Scandinavians who have the condition. But for people living in the same region and not having a condition, the risk of being disabled must not necessarily differ by the same extent from Scandinavians who do not have the condition.



Data and methods

- ▶ Control variables age, age squared (non-linearity of the morbidity, differential survival), attained education (basic, secondary, higher), partner in the HH
- ▶ Weighted data (individual weights CIW_w4) used

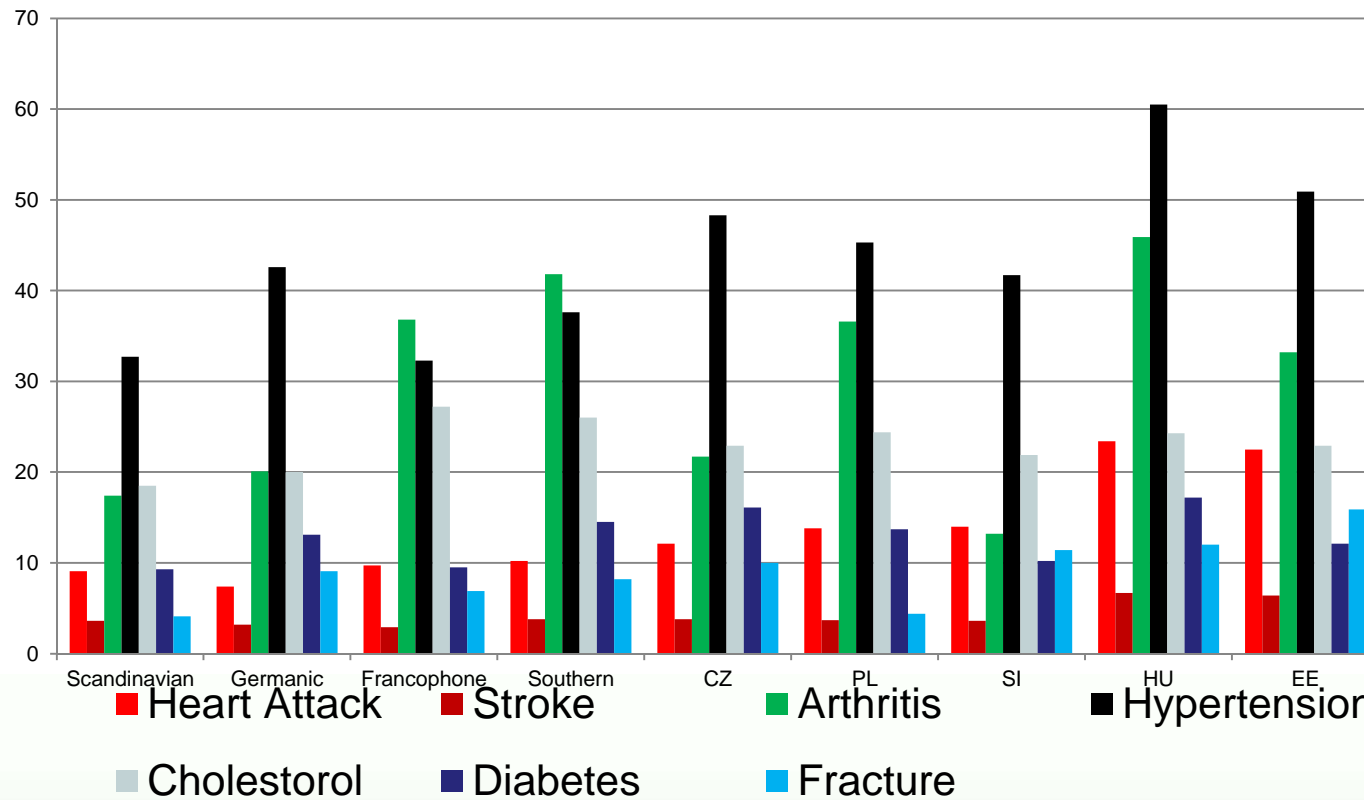


Hypotheses

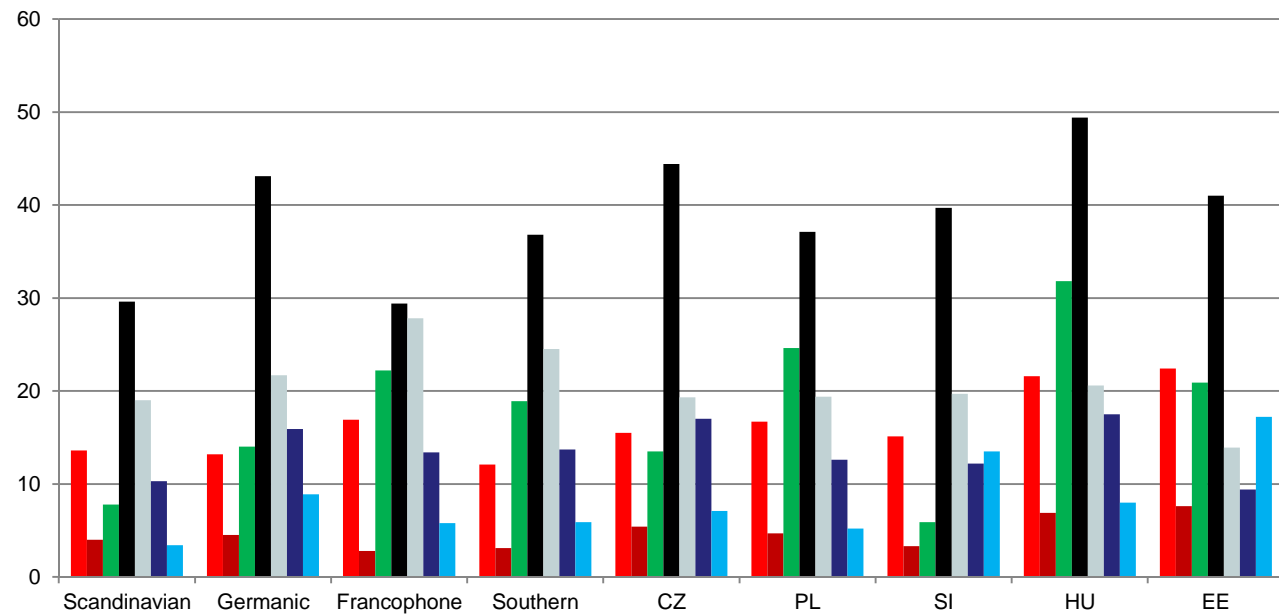
- ▶ Later entry into cardiovascular revolution, the higher the disability levels – highest levels expected to East European countries, less so for those in South, but all higher compared to Nordic countries



Prevalences in chronic diseases, female SHARE 2010



Prevalences in chronic diseases, male SHARE 2010

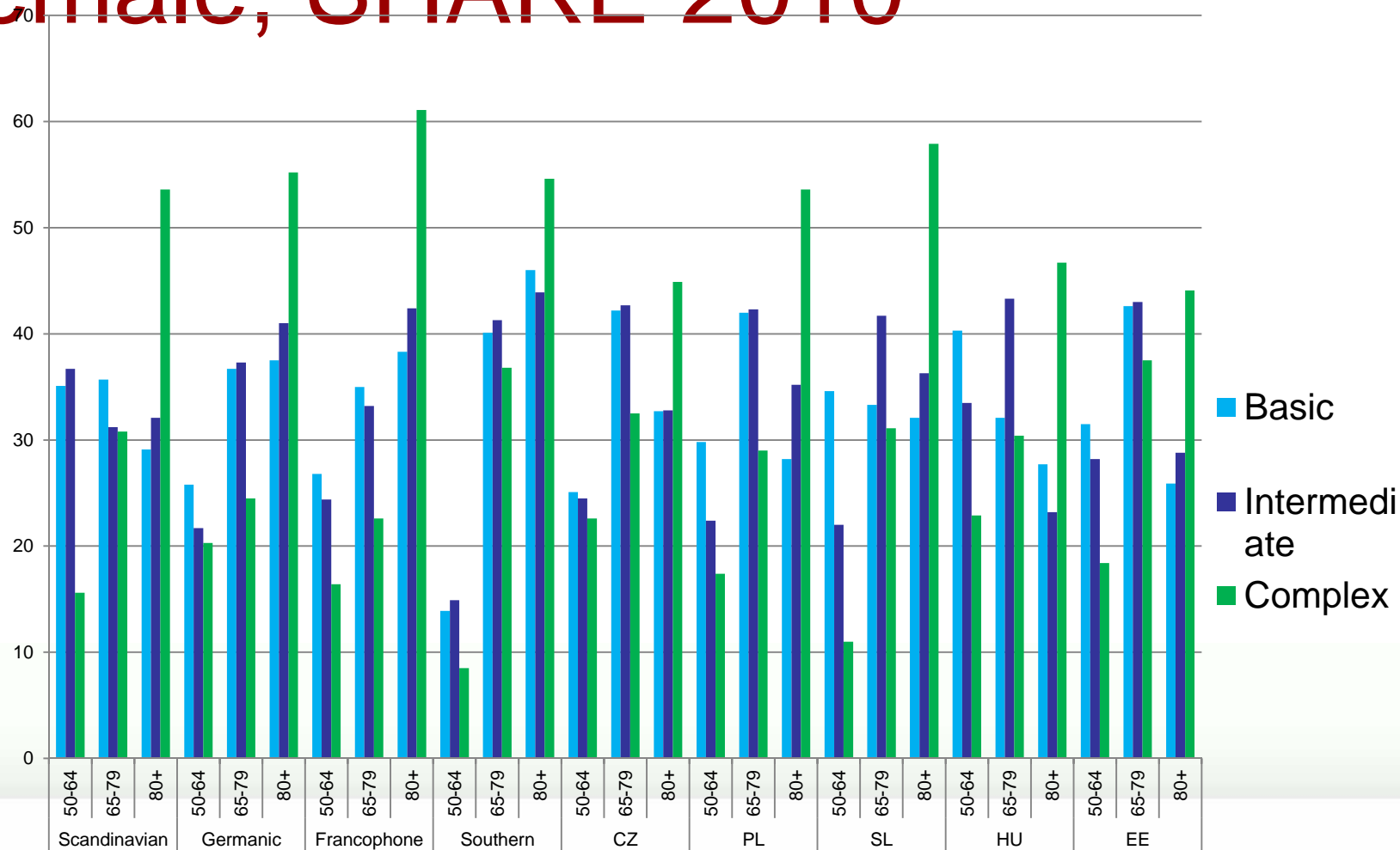


■ Heart Attack ■ Stroke ■ Arthritis ■ Hypertension
■ Cholesterol ■ Diabetes ■ Fracture

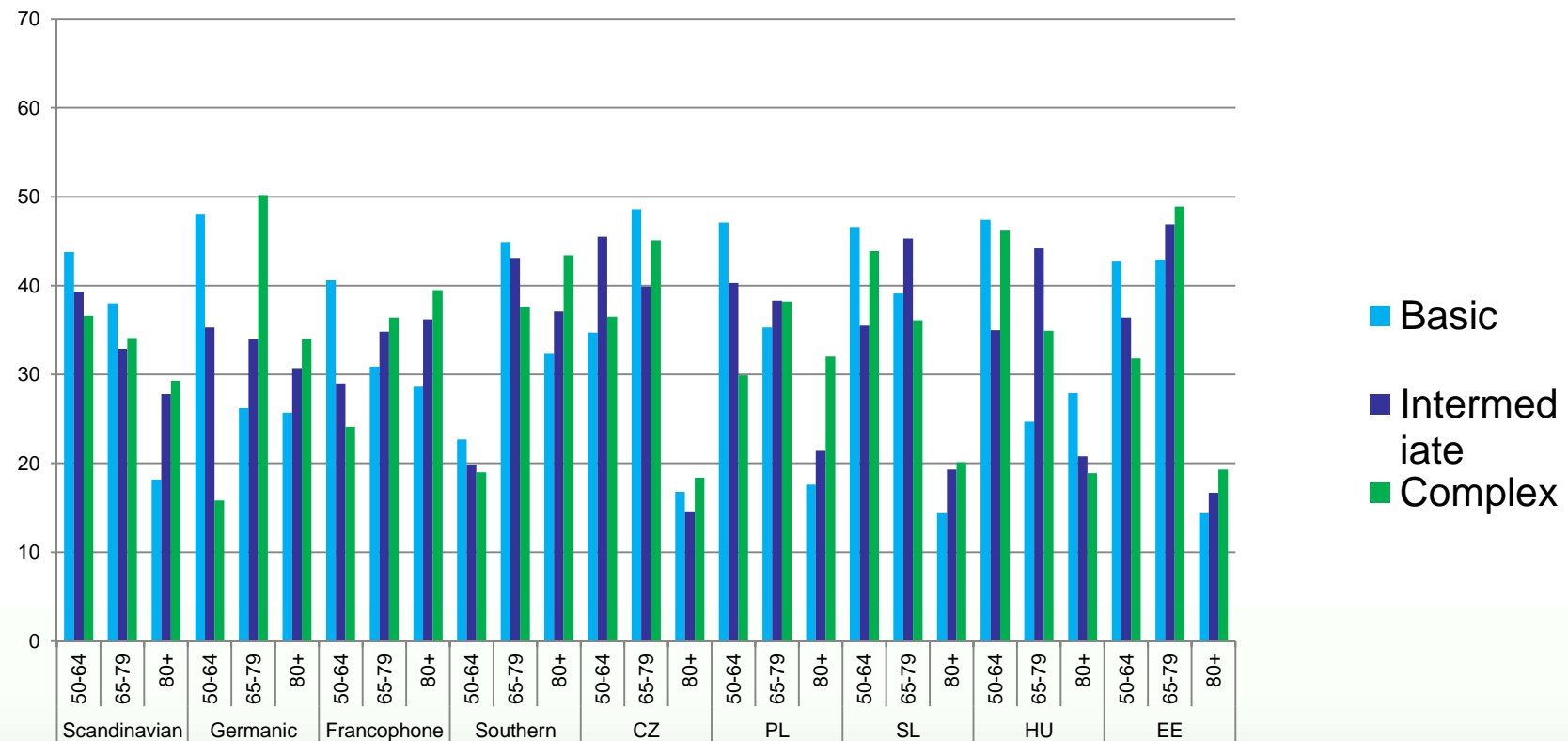


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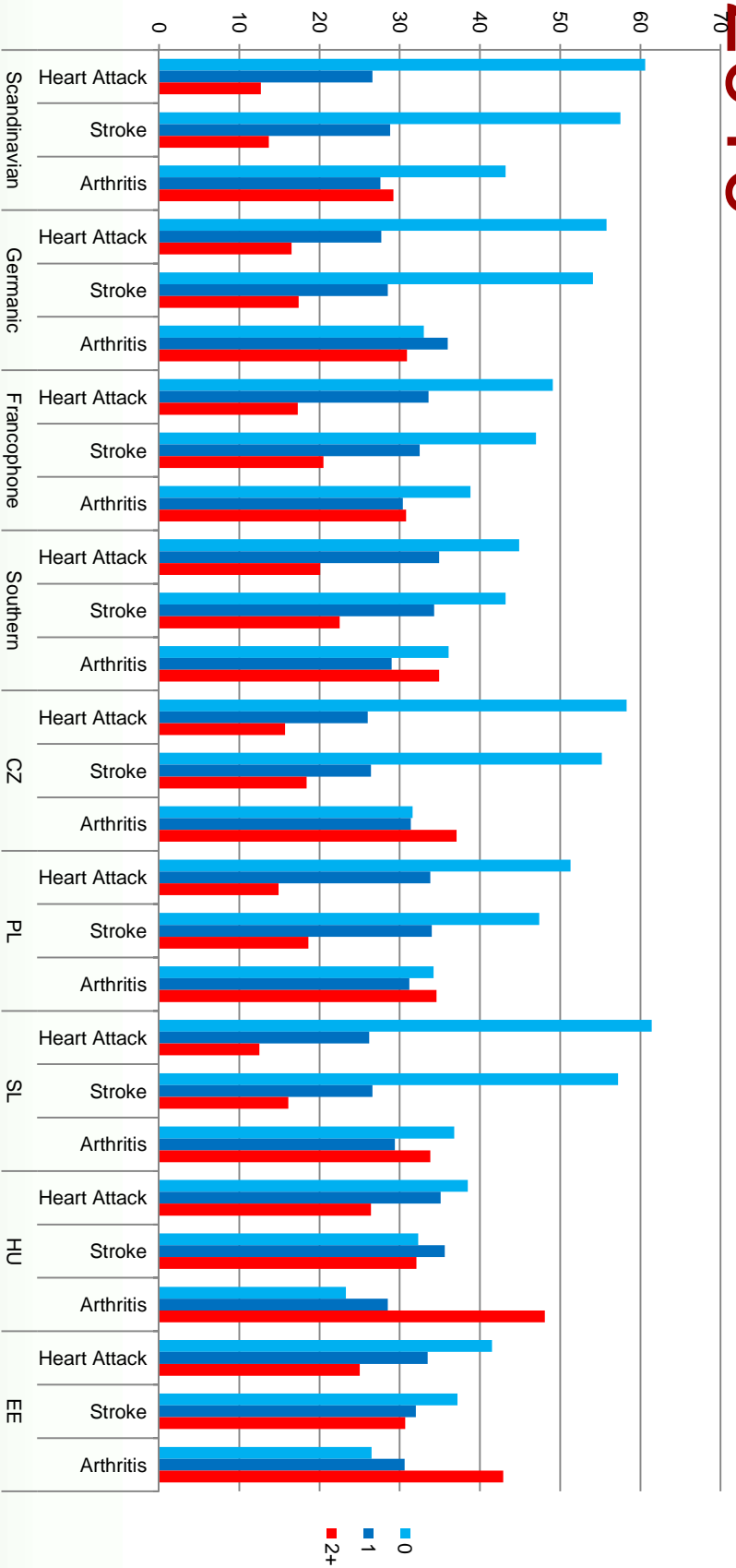
Prevalences in disability levels, female, SHARE 2010



Prevalences of disability levels, male, SHARE 2010

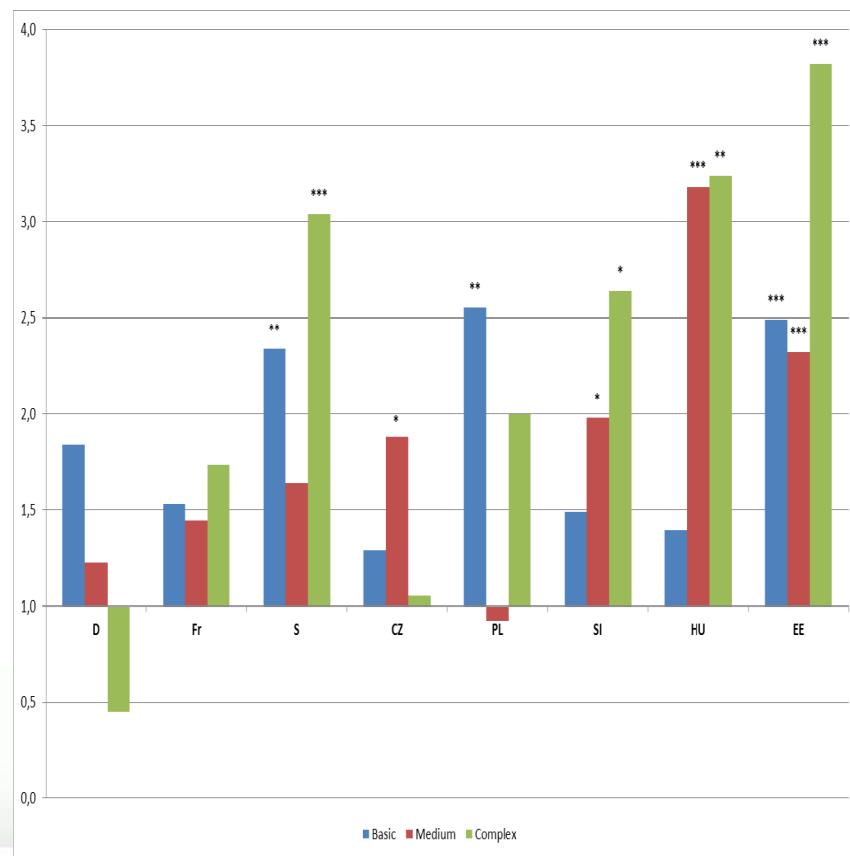


Prevalences of co-morbidities by chronic conditions, total, SHARE 2010

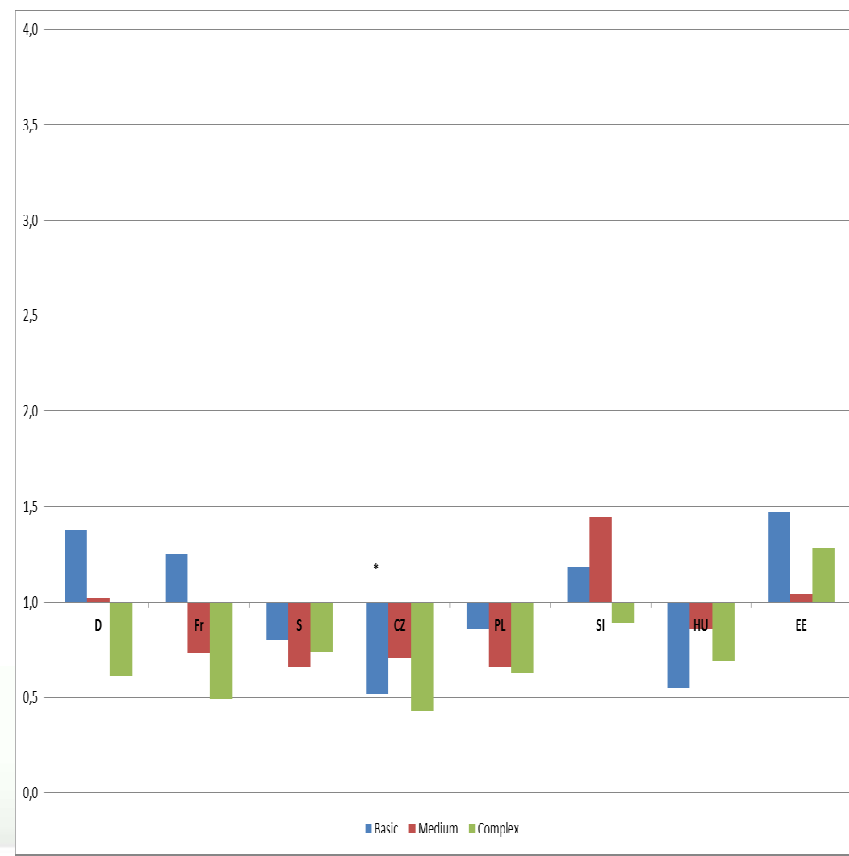


Disability risks from heart attack

Female population



Male population

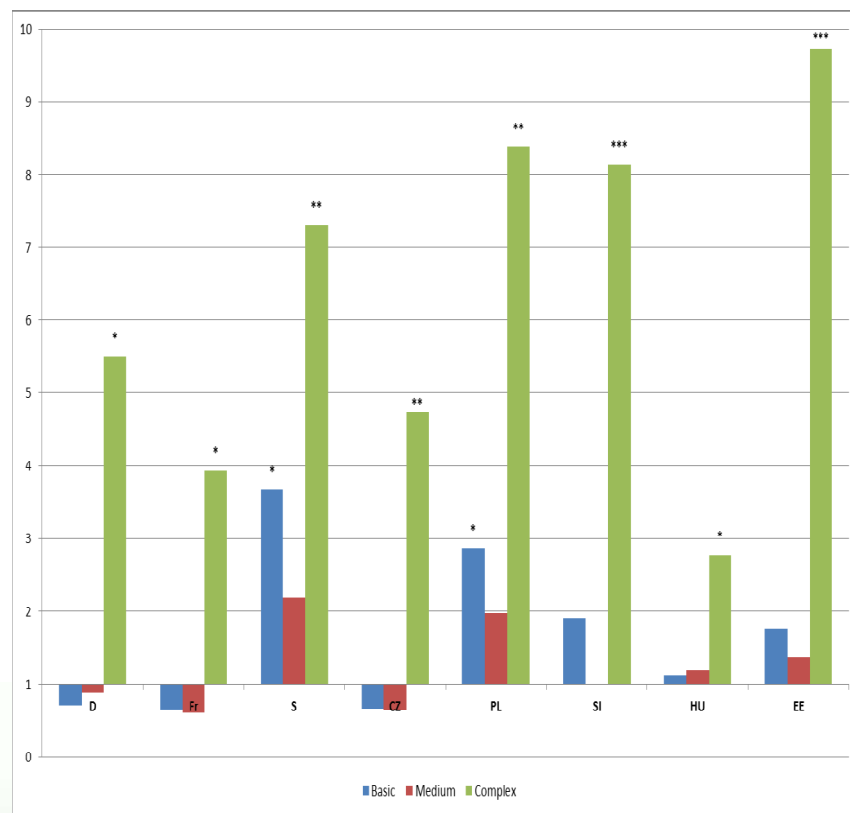


Results from disability risks from heart attack compared to Scandinavia

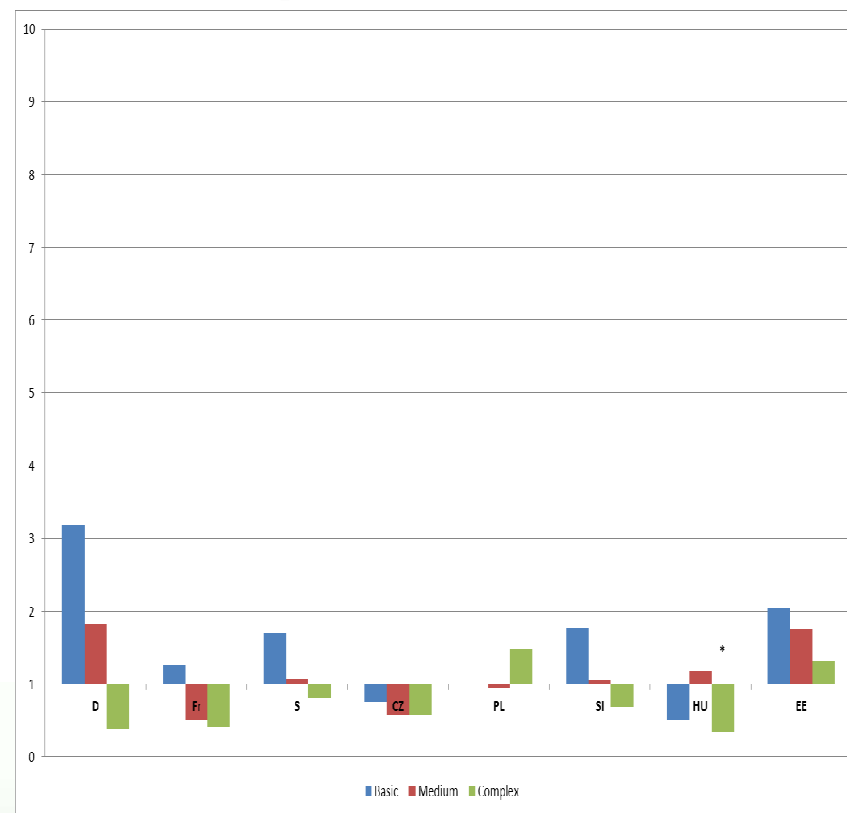
- ▶ Polish and Estonian women 2,5 times higher risk in basic activities
- ▶ Hungarian (3.18) and Estonian women (2.32) higher risk in medium activities
- ▶ Estonian (3.82) and Hungarian (3.24) higher risk in complex activities
- ▶ Men do not significantly differ in any country, except healthy men in Estonia (regressions not shown here) compared to healthy men in

Disability risks from stroke

Female population



Male Population



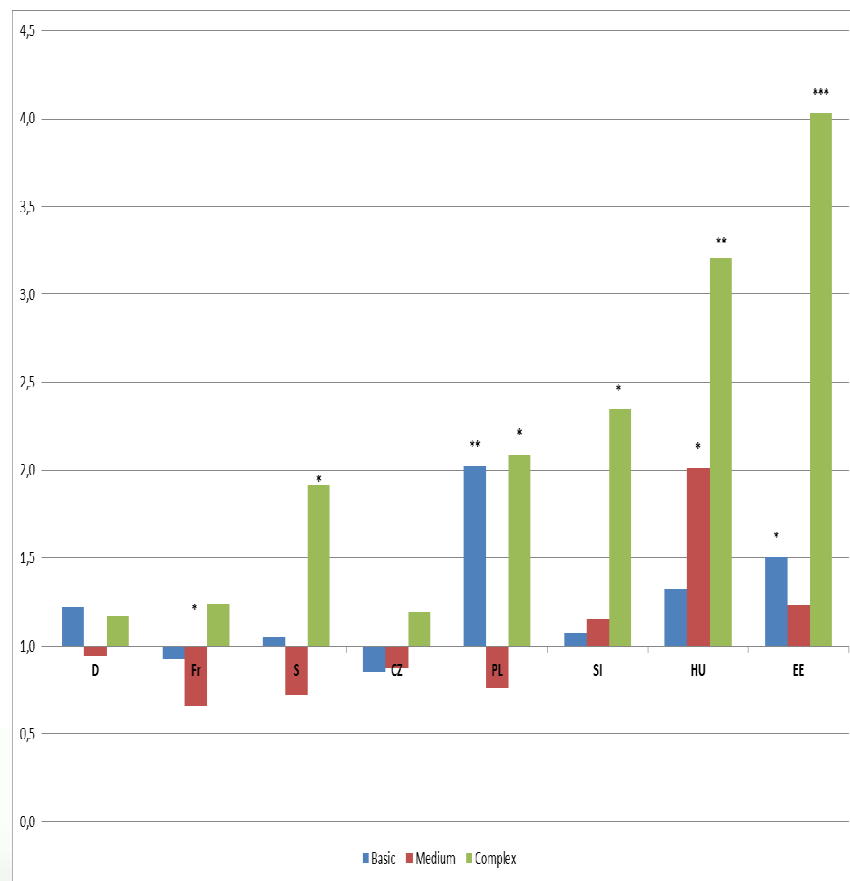
Results from disability risks in stroke compared to Scandinavia

- ▶ South European (3.67) and Polish (2.87) women higher risks in basic activities
- ▶ No significant differences of risks in medium activities, and among men in general, except among healthy where Hungarian women and men and Slovenian men have higher risks in medium activities compared SC counterparts
- ▶ In all countries among women- risks in complex activities are high (EE, PL - highest)

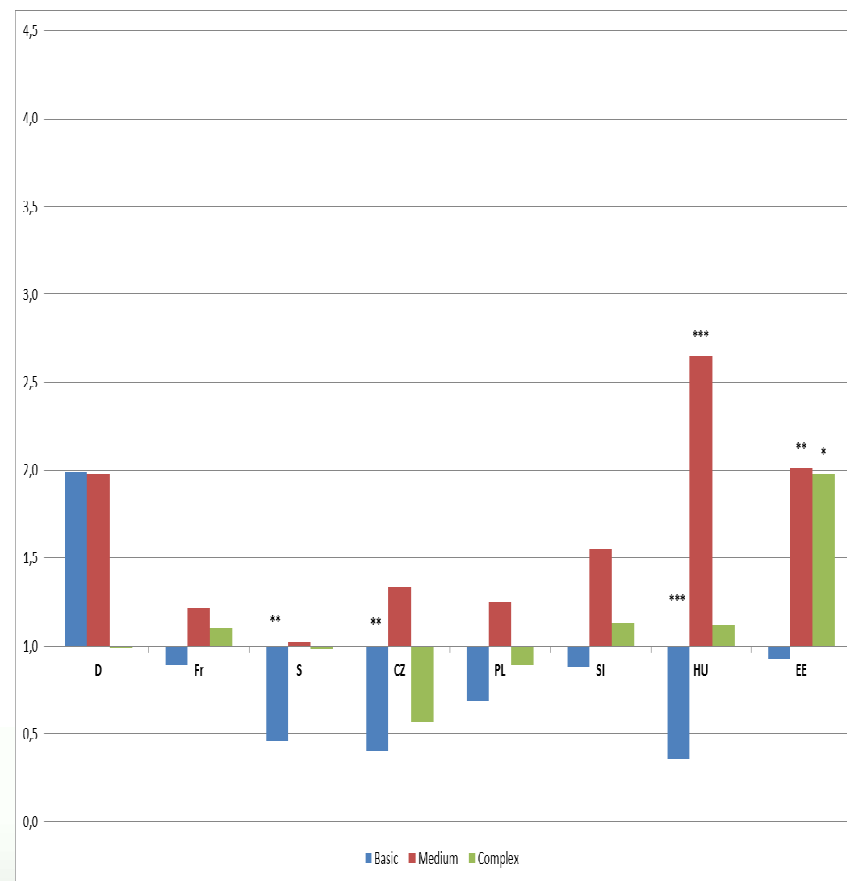


Disability risks from arthritis

Female population



Male population



Results from risks in association with arthritis compared to Scandinavia

- ▶ Polish (2.02) and Estonian (1.5) women highest risks in basic activities, Hungarian (2.01) women in medium activities, Estonian (4.03) and Hungarian (3.24) women in complex activities
- ▶ South European, Czech and Hungarian male significantly lower risk in basic activities, Hungarians and Estonians higher in medium and Estonians (1.98) also in complex activities.



Discussion

- ▶ Regional disability risk differentials are higher among women across all 3 chronic conditions compared to Scandinavia, in particular for heart attack and stroke and in relation to complex activities (differential survival effect? or women less institutionalised?)
- ▶ No differences among men in heart attack and stroke compared to Scandinavia (equally bad still?)



Discussion (cont.)

- ▶ Stroke – more disabled in complex activities, the impact not reduced when controlling variables added (manifestation more likely in countries with low access to nursing homes?)
- ▶ Risks from heart attack in medium and complex activities were significantly reduced when controls for smoking and drinking for women in German, Francophone and Poland were added, for men in all 3 disability levels reduction visible



Discussion (cont)

- ▶ All East European countries mostly less favorable outcomes, but with differences:
- ▶ Czech best – rapid transition, more universalistic welfare regime (one would expect from Slovenia, but higher complex disability risks for women (also among healthy))
- ▶ Polish next best, educational differences big (inequalities, informal care more), smoking habits have an effect



Discussion (cont)

- ▶ Hungary and Estonia – the worst (lowest Les, lowest HLYs, highest disability levels- most liberal regimes among East European countries, reliance on informal care)
- ▶ Scandinavian disability risks highest in relation to arthritis



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