Assessing the contribution of poverty to educational differentials in disability in 26 European countries

Work in progress

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Large social inequalities in health in Europe

Reducing SES differentials to improve population health

 Variation in their magnitude across European Member States

- Disadvantage of the low-educated (LED)
- Advantage of the high-educated (HED)
- Varying structure advantage/disadvantage

Cambois E, et al. *J Epidemiol Community Health* 2015;0:1–8. doi:10.1136/jech-2015-205978
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_variation in their structure across European Member States_

- **Low-educated group lag behind** (DK, BE, IT, CZ, HU)
- **High-educated group run forward** (NO or E-B MS)

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Variation in the disability disadvantage across European educational groups

Challenges:

✪ How much of the (dis)advantage modified by the social protection?

✪ Would a reduction in poverty differentials reduce inequalities in disability?
  ✓ Poverty => limited access to elementary goods and services
  ✓ Could policies against poverty (or its consequences) reduce disability differentials?

Research question:

✪ To what extent poverty mediates disability inequalities across countries?
  ✓ Different risks and differentials across countries (# level of social protection)
  ✓ Different distribution across determinants related to education (care, behaviours, work,...)
Variation in the disability disadvantage across European educational groups

Data and measures

EU-SILC 2009 in 26 European countries (30-79 years old, N=289,816)

- Welfare regime groups: Nordic / Western / Southern / Eastern-Baltic MS

Disability: Global activity limitation indicator (GALI)

Education (ISCED): 0-2 = low (LED) 3-4 = middle-educated; 5-6 = high (HED)

Poverty: as a mediator of the education-AL association

Economic Hardship* (EH) = subjective indicator

= “Difficulties in making both ends meet” + “unable to face unexpected expenses”

Large variation in the level of reported economic hardship

Lowest levels (<15%) in Nordic MS + NL

Highest levels (>50%) in Eastern-Baltic MS => BG, LT, HU, LV.

Above 25% in IE, FR, CY, IT, ES, RO, CZ, PL, SI, EE, SK
Large variation in economic hardship within countries

Systematic protection of the high-educated compared to low-educated

But, variation in the differentials and relative position of education groups
ORs of AL associated with *country* economic hardship controlling for age, sex and education - 2009

Economic hardship is significantly associated with disability
Assessing the disability disadvantage across European educational groups

Methods

- Logistic regressions using nested models “KHB” for each country
  - AL for low-educated vs middle-educated (controlled for age, age^2, sex)

- Total effect of education: Education (control + residuals)
- Indirect effect mediated by EH
- Direct effect (net of the indirect effect mediated by EH)

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Methods

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- Total effect of education: Education (control + residuals)
- Indirect effect mediated by EH
- Direct effect (net of the indirect effect mediated by EH)
- Mean effects (average of the country specific effects)

Extra-disadvantage in DK, BE, IT, CZ, HU... IE, UK, PT, GR

Reduced-disadvantage in SE, FI, BG, RO... ES

Reduced-advantage in DK, BG... NL, AT, ES, PT, IT, CY

Extra-advantage in NO, RO, CZ, LT, HU, EE... GR

Effect of low-education vs middle-education on AL

Effect of high-education vs middle-education on AL

Total effect

Mean TE (0.45)

Mean TE (-0.48)
Reduced advantage in DK, BG, ... NL, AT, ES, PT, IT, CY

Extra-advantage in NO, RO, CZ, LT, HU, EE... GR, IE

Reduced-disadvantage in SE, FI, BG, RO... ES

Effect of low-education vs middle-education on AL

Effect of high-education vs middle-education on AL

(0.55) ➔ (0.45)

(-0.48) ➔ (-0.38)
1) The size of the effect depends on the size of the total effect, frequency/effect of EH:
   ✓ Smaller indirect effect for the HED in general, and in the Nordic countries
   ✓ Large indirect effect for LED in IE, UK, AT, IT, CZ, SI: over-exposure to EH => extra-disadvantage in disability)
   ✓ Large indirect effect for HED in IE, UK, CY + E&B: over-protected from EH => extra-advantage in disability)

2) But also depends on the educational distribution of poverty (large/polarized/…)

3) Need also to consider the % contribution (among other social determinants)
Summary of the results

Nordic MS

- SE & FI: a reduced disability disadvantage which focused on (few) situations of EH
  A small EH effect but a large contribution to the disadvantage (50% SE / 35% in FI) => selection?
- DK & NO: large disability disadvantage, few EH which contributes moderately
  Other determinants: behaviors, care, work …? => due to the unusual tobacco in DK?

Western and Southern MS

- BE, AT, IE, UK, PT, CY, GR & IT: large AL disadvantage for LED
  EH explains the extra-disadvantage in IE, UK, AT and IT
  EH contributes for > 25% in IE, UK, AT, CY
  EH explains also a large part of the extra-advantage of HED
- Elsewhere relatively small contribution => other determinants related to education matter

Eastern and Baltic MS

- Larger LED disadvantage HU & CZ and larger HED advantage in RO, CZ, LT, HU, EE
  EH is frequent and contributes to some extent (15 - 25%) at both ends of the gradient
  EH contributes > 25% in BG, PL and SI

=> Large gains expected
Discussion

Limits

Comparability of measures?
Differences in what level of education means?
What is behind economic hardship: access to elementary goods, housing, behaviors…?

First highlights

1. EH contribute to the variation in disability educational differentials / extra-(dis)advantage
2. Improvement in the situation related to EH should help reducing disability differences: western and southern MS are concerned (IE, UK, AT, IT, CY) + BG, PL, SI
3. In other countries, other social determinants contribute to the LED disadvantage

Next steps

Men & women differences
Trends in the contribution using more recent data
Understanding the situations of economic hardship
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THANK YOU FOR YOUR ATTENTION
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Reduced-disadvantage in SE, FI, BG, RO... ES

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Total effect (0.45)
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Reduced-disadvantage in DK, BG... NL, AT, ES, PT, IT, CY
Extra-advantage in NO, RO, CZ, LT, HU, EE... GR

Effect of low-education vs middle-education on AL

Total effect
Mean TE

(0.45)

Effect of high-education vs middle-education on AL

Total effect
Mean TE

(-0.48)
Contribution of EH among the determinants of the LED disadvantage:

- in SE, EH is scarce explains half of the very small disadvantage: who are they (selection)?
- Large contribution in a number of countries such as IE, UK, AT, CY => room for progress and in countries where EH is frequent (at both ends of the gradient) but with a smaller %
- In DK, NO, GR and some E-B MS: smaller contribution. What else matter?