Public Health in Germany: East vs. West or Poor vs. Rich?

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Social inequalities and health

- Vertical: “top” vs. “bottom” (income, status, educ.)
- Horizontal: e.g. gender, marital status, nationality
- Place or “context” with additional explanatory potential? Place/context comprises:
  - A social composition in terms of employment quota, mean income, etc.
  - Specific features of the
    - Built environment (e.g. air quality, noise, walkability)
    - Social environment (e.g. social capital, crime)

Public Health in Germany

1. Germany: “East vs. West” or differentiation at small-area level?
2. Do small-area “contextual” factors contribute to health inequalities?
3. How should we reduce social and health inequalities?

Social inequalities in Germany

Basic Constitutional Law (Grundgesetz Art. 72, Abs. 2) postulates “creation of equal living conditions”

There “… were and are (…) major differences in living conditions throughout this republic – between North and South as well as between West and East.”

“Those trying to level them will cement the subvention state and will lay upon the young generation an intolerable burden of debt. (…) What is important is to create room for peoples’ ideas and initiatives”.

(Then) Federal President Köhler, 2004

Gross domestic product East and West, 1991-2005

Source: Statistische Landesamt Baden-Württemberg 2006
Life expectancy at birth

- East-West difference (2008/10):
  - Women 0.2 years
  - Men 1.3 years

... in spite of persisting socio-economic differences

Source: Federal Statistical Office 2012

Socioeconomic uncoupling of regions

Unemployed and social benefit recipients, per 100 inhabitants aged 18-65 years, 2003

- Lowest: 3.8% (Upper Bavaria)
- Highest: 27.1% (Halle)

Source: Kröhnert et al. 2006

Net East-West migration, Germany, since 1945

<table>
<thead>
<tr>
<th>Time period</th>
<th>Net migration to the West</th>
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<tbody>
<tr>
<td>1945-48</td>
<td>732 000</td>
</tr>
<tr>
<td>1949-61</td>
<td>2 687 000</td>
</tr>
<tr>
<td>1961-88</td>
<td>673 000</td>
</tr>
<tr>
<td>1989/90</td>
<td>784 000</td>
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<tr>
<td>1991-2004</td>
<td>781 000</td>
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</tbody>
</table>

Net East-West migration since re-unification: > 1.7 million; balanced since 2011

Source: Müller 2005; Berlin-Institut 2012

Is migration selective?

Number of women per 100 men in the age group 18-29 years

Source: Kröhnert et al. 2006

Demographic transition

Population growth (in %), 1990-2004

Source: Kröhnert et al. 2006

Population growth in the Ruhr area, Germany

Population projections 2002-2020, change in %. Source: Projekt Ruhr 2006 (unpubl.)
“Redistribution of a shrinking population” –

in East and West

Bergheim 2003

Effects on local communities

• Decline in local income tax, losses in federal financial transfers to cities
• Net infrastructure cannot be partitioned
  – Roads
  – Water pipes
  – Sanitation system
• Shrinking of cities not a contractive process, instead: “perforated cities”

Herz & Marschke 2005

Consequences on health?

Example: Life expectancy Ruhr area (2002-04):
  – Men 1.3 years below NRW average
  – Women 0.9 years below NRW average
  (East-West difference: 1.3 and 0.2 years)

Excess mortality in Ruhr area:
  - middle age group 40-49 years most affected
  - causes of death avoidable (CVD and alcohol-related)

Disparities increasing?
Association between area deprivation and health?

“Contextual” factors and health inequalities

Contextual effects on health

• Linkage of socioeconomic panel data (SOEP) with small area data (INKAR) for all 439 cities/counties of Germany
  “…substantial [and] increasing regional disparities were identified across the whole of Germany…”

Voigtländer et al. 2010 a

Contextual effects on health

• Impact of regional and neighbourhood deprivation on physical health in Germany: a multilevel study based on a linked SOEP and INKAR data set
  “This study finds a significant association between area deprivation and physical health (…). The association between neighbourhood deprivation and physical health can be partly explained by specific features of the neighbourhood environment.”

Voigtländer et al. 2010 b
Explaining inequalities in regional distribution of health

• Merely aggregation of individual disadvantage?
  Perhaps less well-off people remain in an area...
  → Compositional effect (effect of population structure)

• Causal effect of contextual factors?
  Attributes of social and built environment act on health
  → Contextual effect

Would require experimental study randomly assigning people to regions with different degree of deprivation and observing them over time

Assessing the effect of regional deprivation on mortality

• Ethnic German resettlers (Aussiedler) migrated from former USSR to Germany since 1990
• Quasi-randomly distributed, independent of confounders, eg. socioeconomic status, health risk
• IPH Heidelberg AMOR cohort: follow-up of ~34,000 resettlers in NRW over ~10 years
• Participants linked to the 54 counties of NRW, aggregated in 6 deprivation clusters

Assessing the effect of regional deprivation on mortality

• Comparison of resettlers’ mortality between clusters (no difference expected if only compositional effects at work)
• In fact: highest mortality in “Poverty poles” cluster
• Cox modelling with “Poverty poles” as reference:
  - RR = 0.82 in “Prospering regions” cluster
  - RR = 0.87 in “Family zone” cluster
• Study provides supporting evidence for a causal effect of regional (contextual) factors on health

Conclusions (1)

• Focus of attention on comparing socioeconomic and health status in East vs. West
• But: living conditions increasingly diverge in the whole of Germany at local-area level
• This contributes towards health inequalities apparently via contextual effects
• Selective migration (as in East=>West) likely to compound the situation via compositional effects
• Vicious circle of socioeconomic disadvantage and declining population health in affected regions?
Conclusions (2)

- Interventions to change individual behaviour ("Verhaltensprävention") not sufficient => paradox effect of increasing inequalities
- Prevention needs to address contextual factors as well ("Verhältnisprävention")
- Prerequisite for creating “room for peoples’ ideas and initiatives” (Köhler): reducing health inequalities
- Requires targeted regional investments in the provision of social goods (education, subsidized housing, employment, unemployment benefits, urban planning...)

Selected publications from the project


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