Are area-level and individual-level socioeconomic factors associated with self-rated health in adult urban citizens?

Evidence from Slovak and Dutch cities
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Background

• Importance of the context of cities

• Associations of poor health with disadvantaged urban neighbourhoods (Hou and Myles, 2005; Reijneveld, 2002; Reijneveld, 1998; Collins, et al., 2009; Browning, et al., 2003; Stafford, et al., 2001) due to socioeconomic (SE) characteristics of both these residents (Reijneveld and Schene, 1998) and of the areas where they live (Reijneveld, 2002; Gray, et al., 2012; Giatti, et al., 2010; Agyemang, et al., 2007)

• Evidence on area-level socioeconomic differences in Western and Central Europe (Dragano, et al., 2007; Bobak, et al., 2006; Bobak, et al., 2004)

• Comparison on urban-level SE health differences between Central European and Western European countries is lacking
Background
Research questions

• What is the impact of area-level and individual-level SE factors on the prevalence of poor self-rated health (SRH) among urban citizens in Slovakia and in the Netherlands?

• Is prevalence in poor SRH higher in deprived areas?

• Is there a difference between Slovakia and the Netherlands per age group?
• **Design:** cross-sectional postal survey within EURO-URHIS2 project in Bratislava, Kosice, Amsterdam, Utrecht

• **Population:** A representative sample of 1600 persons from each city was equally stratified by age groups (19-64, ≥65) and gender
Methodology

- Data collection via self-administered postal questionnaire survey (Sept./2010-Jan.-March/2011)
- Personalized questionnaires
- A raffle and gift incentives were used
- Repeated contact of non-responders:
  - Questionnaire
  - Reminder
  - Questionnaire
  - Telephone call
• Dependent variable
  Self-rated health

• Socioeconomic status measured by:
  Education
  Household income
  Financial strain
• Slovak neighbourhoods
  = local administrative units on the lower level (the LAU 2 level) as defined by Eurostat

• Dutch neighbourhoods
  = areas based on postcode sectors
Area-level data on socioeconomic status measured by:

- **Unemployment rates**  
  (Census 2001, UWV WERKbedrijf 2010)

- **Proportion of primary educated residents**  
  (constructed from the EURO-URHIS2 survey)

- **Proportion of university educated residents**  
  (constructed from the EURO-URHIS2 survey)

⇒ split into tertiles of deprivation: least favourable, medium and most favourable
• **Chi-square tests** and **multilevel logistic regression**: differences in poor SRH by area deprivation
• Response rate in Slovakia was 44.2% (N=1296) and in the Netherlands 46.9% (N=1484)

• Total sample N=2652

• Mean age 59.02 (±18.2)

• Respondents did not differ from non-respondents regarding age/gender
• The Slovak sample comprised 1248 respondents from 61 neighbourhoods
• The Dutch sample comprised 1404 respondents living in 201 neighbourhoods

### Area characteristics

<table>
<thead>
<tr>
<th>Number of respondents per neighbourhood (Mean)</th>
<th>Number of neighbourhoods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Netherlands (N=201)</td>
</tr>
<tr>
<td>1 - 4</td>
<td>66</td>
</tr>
<tr>
<td>5 - 14</td>
<td>122</td>
</tr>
<tr>
<td>15 - 39</td>
<td>13</td>
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<td>Over 40</td>
<td>0</td>
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</tbody>
</table>
Results

Characteristics of the sample aged 19-64

Main study variables

Gender
- Males
- Females

Self-rated health
- good
- poor

Household income
- low
- medium
- high

Education
- no formal or primary
- secondary
- university

Financial strain
- yes
- no

Netherlands (N=655)
Slovakia (N=613)
Results

Characteristics of the sample aged 65 and over

Main study variables

Netherlands (N=749)
Slovakia (N=635)
Results

Prevalence of self-rated health in deprivation tertiles of urban neighbourhoods in Slovakia and in the Netherlands for respondents aged 19-64

* p<0.05
Results

Prevalence of self-rated health in deprivation tertiles of urban neighbourhoods in Slovakia and in the Netherlands for respondents aged 65 and above

* p<0.05
Results

Associations of poor SRH in areas characterized by a low proportion of university educated residents for respondents aged 19-64

Ref. category: deprivation: most favourable; country: the Netherlands, income: high; education: university; financial strain: no
MOR = median odds ratio

Models: M1-crude; M2, M3 and M7 adjusted for age and gender and their interactions; M3 and M7 adjusted for country by area deprivation
Results

Associations of poor SRH in areas characterized by a low proportion of university educated residents for respondents aged 65 and above

Ref. category: deprivation: most favourable; country: the Netherlands, income: high; education: university; financial strain: no
MOR = median odds ratio

Models: M1-crude; M2, M3 and M7 adjusted for age and gender and their interactions; M3 and M7 adjusted for country by area deprivation
Results

Associations of poor SRH in areas characterized by a high proportion of unemployed residents for respondents aged 19-64

Ref. category: deprivation: most favourable; country: the Netherlands, income: high; education: university; financial strain: no
MOR = median odds ratio
Models: M1-cru; M2, M3 and M7 adjusted for age and gender and their interactions; M3 and M7 adjusted for country by area deprivation
Results

Associations of poor SRH in areas characterized by a high proportion of unemployed residents for respondents aged 65 and above

Ref. category: deprivation: most favourable; country: the Netherlands, income: high; education: university; financial strain: no
MOR = median odds ratio
Models: M1-crude; M2, M3 and M7 adjusted for age and gender and their interactions; M3 and M7 adjusted for country by area deprivation
Conclusion

- In both countries, poor SRH was associated with area deprivation, but the results differed by type of area indicator and by age group.

- While the association between poor SRH and area deprivation in younger age groups for Slovakia was rather flat, for the Netherlands it was steeper, with a higher prevalence of poor SRH in deprived areas.

In contrast, for the elderly the association of SRH and area deprivation was steeper in Slovakia, but flat for the Netherlands.
Conclusion

• Slovak citizens reported poor SRH significantly more often than Dutch residents

• Individual SE factors were significantly associated with poor SRH in both age groups and both countries
• Our data might be used by local policy makers in both countries in preparing policy documents with a focus on social determinants of health in local/urban settings

• Policy makers from the post-communist countries should face two challenges:
  1. keep the observed equity between the younger populations
  2. combat the problems that the elderly might meet in deprived areas
Thank you for your attention

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References