

Neighborhood sociodemographic structure, neighborliness, and coronary heart disease mortality

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ENVIRONMENT AND CHD

Associations between neighborhood SEP and coronary heart disease

Diez-Roux, N Engl J Med 2001; Chaix, Am J Epidemiol 2007

Underlying mechanisms unknown...
→ anything causal???

A PREVIOUS HYPOTHESIS

Neighborhood residential instability and coronary heart disease

1. Detrimental effect of neighborhood residential instability on social networks

Chicago school of Sociology

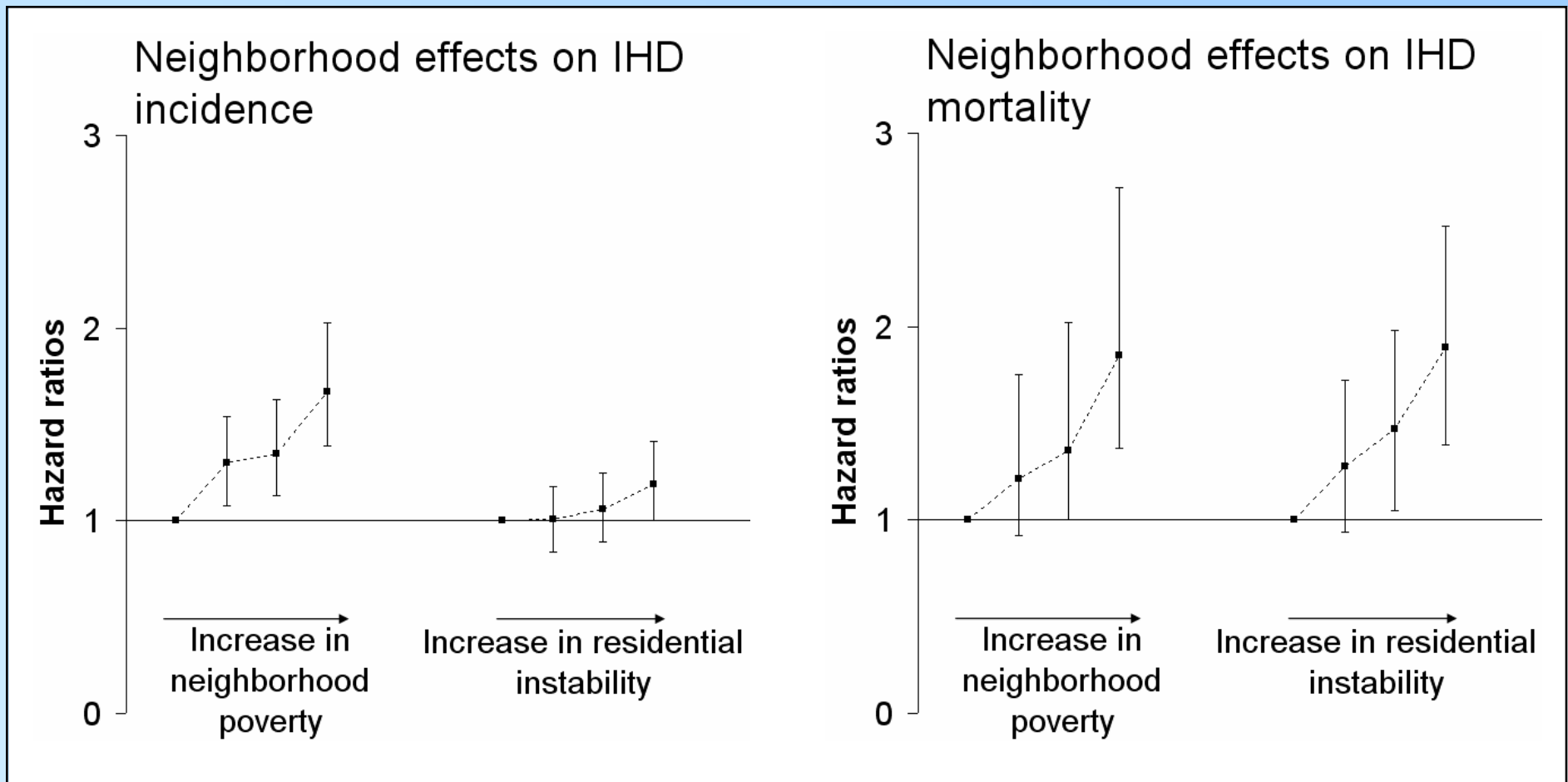
Shaw et McKay, 1942; Sampson et al, Science, 1997

2. Social support is protective for coronary health

Rozanski, Circulation, 1999

PREVIOUS RESULTS *(Epidemiology, 2007)*

- LOMAS database, Swedish region of Scania, 3 main cities
- cohort of 43000 individuals aged 50-64 years in 1996
- follow-up over 8 years: CHD incidence and mortality
- multilevel survival models adjusted for age, gender, cohabitation status, education, occupation, income over 21 years, diagnosed diseases



LIMITATION

Is the “effect” of residential instability attributable to social interactions?

1. Derive more direct measures of social interactions

Neighborliness: a disposition of residents to be involved in their neighborhood and helpful to each others

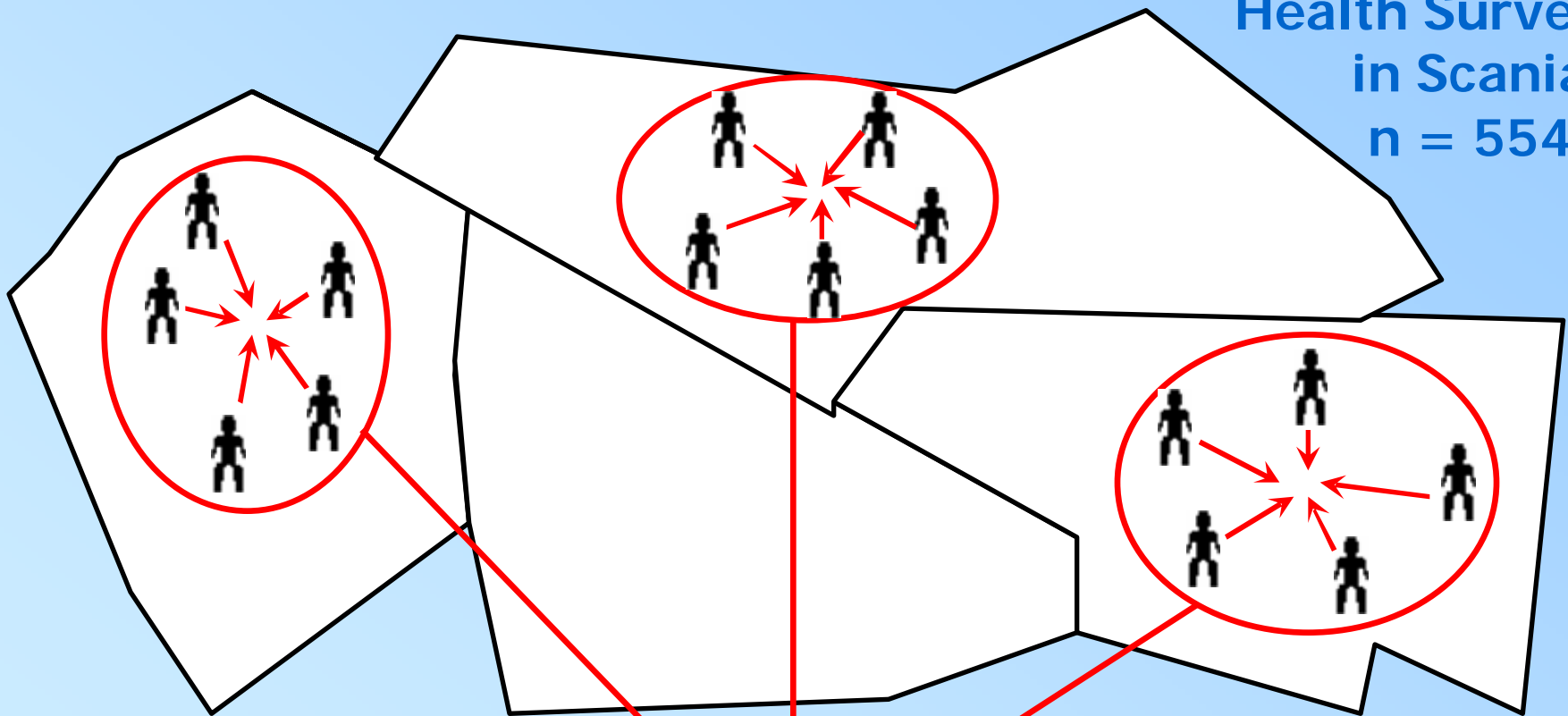
2. Assess their relationship with neighborhood residential instability

3. Examine their association with CHD

ECOMETRICS: NEIGHBORLINESS

Aggregation of answers at the neighborhood level:
"Are you attached to your neighborhood and feel a strong sense of community in your neighborhood?"

Health Survey
in Scania,
n = 5545



Multilevel model:

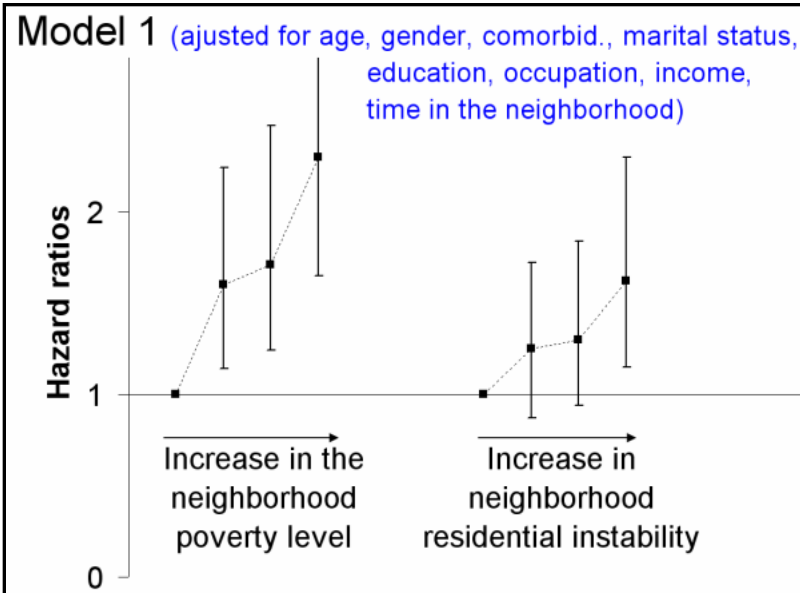
$$\text{Logit}(p_{ij}) = \beta_0 + s_j \quad \text{Var}(s_j) = \underline{0.28 (0.19-0.40)}$$

RESULTS

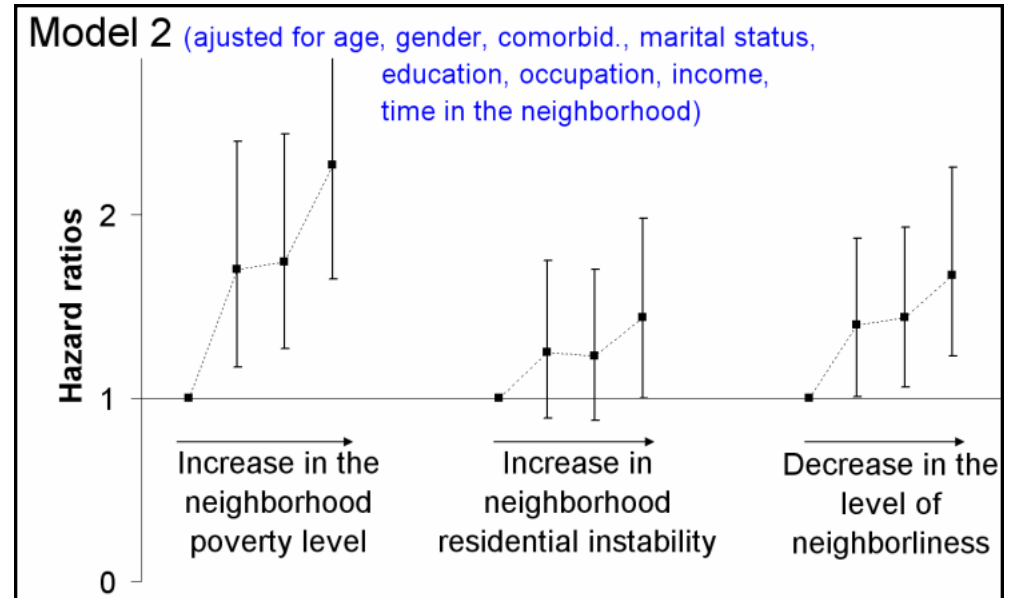
**Associations between neighborhood sociodemographic characteristics and low neighborliness in the neighborhood
(n = 612 neighborhoods)**

	OR*	95% CI
Neighborhood income (vs. high)		
Mid-high	1.02	(0.55–1.88)
Mid-low	1.07	(0.59–1.93)
Low	1.94	(1.11–3.39)
Percentage of stable residents (vs. high)		
Mid-high	3.41	(1.58–7.32)
Mid-low	4.86	(2.28–10.37)
Low	7.48	(3.53–15.84)

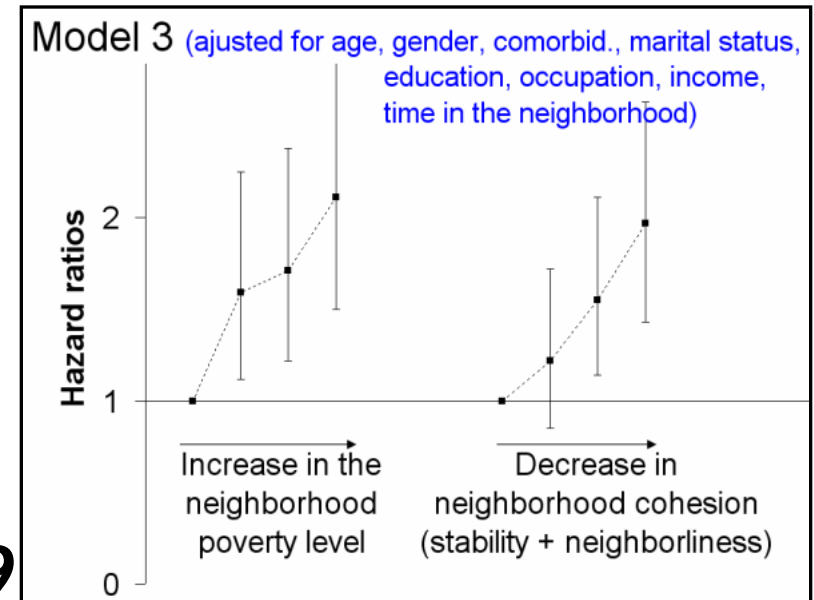
MULTILEVEL MODELS FOR CHD MORTALITY



DIC = 12320



DIC = 12317



DIC = 12309

RECORD (Residential Environment and CORonary heart Disease)

Aim: Mechanisms between the environment and CHD?

- Diversity of social environments (2232 block groups)
 - both extremely poor and rich neighborhoods are represented
- Data collected:
 - biological, clinical, behavioral risk factors
 - health knowledge and attitudes
 - sociodemographic factors
 - **experiences in the neighborhood**
 - environmental data
 - physical environment
 - services
 - social interactions
 - follow-up
 - hospital morbidity & mortality

Target: **7000 participants**
(November 6 2007: 4500 recruited)

Cities of residence, Paris region

