

Is there neighborhood effect on individual health in Korea?

Youngtae Cho
School of Public Health
Seoul National University

Introduction

- Recently increased interest in neighborhood characteristics as independent risk factors of individual health
- Sociological tradition of social forces
- Tradition of public health to emphasize the role of neighborhood

Introduction

- A burgeoning number of studies that show empirical evidence of the effect of neighborhood characteristics
 - accelerated by methodological advances
 - ... but mostly based on Western society
- What about in Korea?
 - Limited evidence so far
 - Is there no effect of neighborhood in Korea?

Introduction

- Two possibilities
 - Neighborhood does not pertain to any impact on individual health in Korea
 - Need of more sophisticated conceptual and methodological modeling strategies to incorporated uniqueness of Korean society
- Possibility #2 is more compelling

Purposes

- To discuss what to consider to appropriately address Korean unique neighborhood characteristics when studying their impact on individual health
 - Concept of neighborhood
 - Neighborhood characteristics
 - Methodological challenges
 - Selection of germane analytic models

Concept of Neighborhood

- Terminology
 - Area, community, neighborhood
- Concept
 - Space where individual's life or round of activities are affected by any characteristics external to individuals and/or where significant interactions between individuals are taking place

Concept of Neighborhood

- What is the unit and how to measure?
 - In general, administrative boundaries are used in Western society based studies
 - Eg) blocs, census tracts, cities, counties, states
 - reasons:
 - Practical reason: sampling units
 - Substantive reason: they include the SPACE

Concept of Neighborhood

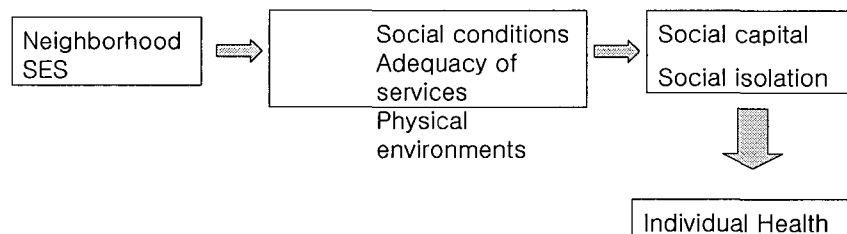
- Administrative boundaries are also general units of neighborhood in many Korean studies
 - sampling units: dong/eup
 - census tracts: dong/eup
 - administrative activities: dong/eup or ku/kun
- Are they appropriately measure the SPACE?

Concept of Neighborhood

- Administrative boundaries in Korea may not appropriately measure the SPACE
 - heavy social density
 - rapid social learning
 - coexistence of heterogeneity
 - residential + commercial + business areas
 - low + middle + high SES residences
 - social activities crossing borders
 - possible inconsistency between objective and subjective neighborhood characteristics

Neighborhood Characteristics

- Many studies based on Western society consider the following neighborhood characteristics to be effective
 - Robert (1998)



Neighborhood Characteristics

– Curtis and Jones (1998)

Material
Landscape:
housing,
employment

Landscapes of
Consumption:
health facilities,
retail outlets

Ecological
Landscape:
hazardous
environments

– Yen and Syme (1999)

Social Structure:
discrimination and
income inequality
(social trust, social
capital)

Quality of Environments: social
and natural environments
(crime, local resources, social
cohesiveness)

Neighborhood Characteristics

– MaCintyre, Maciver, and Soomans (1993)

- physical features shared by all residents
- the availability of healthy/unhealthy environments
- services provided to support the daily lives of residents
- socio-cultural features of the community
- the reputation of the community

Neighborhood Characteristics

– Aber et al (1997)

- physical environments, community SES, age and sex compositions, residential stability, housing density, institutional resources
- participation in the community organizations, informal social networks, social cohesion
- the clarity and consensus about community values and norms

Neighborhood Characteristics

- Which neighborhood characteristics may have meaningful influence on the health of Koreans?
 - it depends on the unit of neighborhood, health outcome, and/or the population of interest
 - relatively short exposure to neighborhood characteristics
 - it may be an extreme divide rather than variations across neighborhoods

Methodological Challenges

- Importance of multilevel analysis techniques (HLM)
 - variations in the dependent and/or neighborhood-level independent variables across neighborhoods have to be preconditioned.
 - individual samples should be representatives of neighborhood population
 - sufficient samples sizes and the number of neighborhoods are important factors in estimating parameters

Methodological Challenges

- Do we have data sets appropriate to carry out the multilevel analysis?
 - sampling frames
 - limitations in collecting neighborhood characteristics
 - samples non-representative of neighborhood
- If we have more of divide than variation, the level 2 variances won't be normally distributed... which suggests just to employ conventional methods would generate more efficient parameter estimators.

Methodological Challenges

- Multilevel analysis for logistic, Poisson, or multinomial models have not been fully developed yet.
 - Need of inventing ways to measure one's health or illness as a continuous variable

Analytic Modeling

- One should not obsess to utilize multilevel analysis techniques
- Causal inferences should be considered between individual health outcomes and neighborhood characteristics
- More attention should be paid to the magnitude and significance of level 2 variances – Is the variability real?
- One should not rule out random slope models
- Inter-level interactions

Analytic Modeling

- Consideration of etiological causality on specific health outcomes
 - Age groups
 - Timing of exposure (Life course)
 - Duration of exposure to neighborhood characteristics
 - Health outcome–specific neighborhood characteristics
- Conceptual specification