Geography of health and well-being in Northern Finland


Tiina Lankila, PhD
Environment

Illness
Health behaviour
Well-being
Social and health services

Society

Regionality
Influence
Detecting and predicting health risks
Research projects related to health and well-being in the Geography Research Unit

- Use of emergency vehicles in emergency care, transportation between health care units, FinnHems
- Social and health service network 2025 I and II, SITRA
- Determinants of lifecourse trajectories of physical activity and sedentary behaviour at midlife, Department of Sports and Exercise Medicine, Oulu Deaconess Institute; Center for Life-course Health Research, Faculty of Medicine; Research Unit of medical Imaging, Physics and Technology; Research Unit of Biomedicine; LIKES; Finnish institute of Occupational Health
- Logistics of support services of health care system in areas of long distances, Oulu Business School; Northern Ostrobothnia Hospital District; Lapland Hospital District; Itella; Nordic Health Group Oy
- Accessibility index for sport facilities (LINDA), Ministry of Education and Culture
- The Influence of Air Pollution, Pollen, and Ambient Temperature on Asthma and Allergies in Changing Climate (APTA), Center for Environmental and Respiratory Health Research (CERH); Finnish Meteorological Institute
- Accessibility and location optimisation of 24/7 emergency services in primary health care in Finland, Ministry of Social Affairs and Health
- Accessibility and location optimisation of university and central hospitals and maternity hospitals in Finland, Ministry of Social Affairs and Health
- Residential area and health of the Northern Finland Birth Cohort 1966, Centre for Life-course Health Research
"Whether people are healthy or not, is determined by their circumstances and environment” WHO

Health: a state of physical, mental and social well-being that is determined by individual characteristics, health behaviour and socio-environmental context.

- Policies
- Social and physical determinants, e.g.
  - Available resources and opportunities
  - Social norms and attitudes
  - Exposure to crime, violence
  - Social support and interactions
  - Transportation
  - Natural environment, recreation
  - Aesthetic elements
- Health services
  - Lack of availability, difficult to access
- Individual behaviour
  - Diet
  - Physical activity
  - Alcohol use, smoking
- Biology and genetics
  - Age
  - Sex
  - Inherited conditions

Northern context - Finland

- Sparse population -> social relationships, activity
- Long distances and remoteness -> Use of (health)services and other amenities
- Scarcity of services and difficulties in arranging them to everyone, scarcity of employment opportunities
- Car dependency -> effects the everyday physical activity
- Closeness of nature, clean environments -> Green environments and forests can relieve stress
- Rural environments, small urban areas
- Out migration -> those move who are able, those move who must
- Northern environment and livelihood -> vulnerability to climate change

-> EFFECTS ON WELL-BEING AND HEALTH OF PEOPLE
Proportion of older people is expected to grow in the future.

- impacts on economic and social conditions in these areas

- similar change is happening also in large parts of eastern and central Finland
Health and well-being in Northern Finland

• Many health and social adversities are pronounced in northern sparsely populated areas: lower life expectancy, more chronic morbidity, poor self-reported health more prevalent. Smoking and unhealthy diet more common but on the other hand so is recreational physical activity.

• Among young adults of the Northern Finland Birth Cohort 1966 (NFBC 1966)
  • Self reported health has been found to be worst in sparsely populated areas. Among men associations are explained by adverse social and lifestyle factors and education, but among women explanation remains open, though education and time of residence explain some of the differences.
  • BMI and overweight has been found to increase with decreasing population density and with increasing distance of approximately 5 kilometres to further from municipality centre.
  • Only weak indication that distance would affect the use of health services in Northern Finland.
Geographical characteristics of the residential area, residential history and health from early adulthood to midlife - A study of the NFBC 1966

- Residential history of cohort members between 31 to 46 years of age.
- Study the long term associations of living in certain areas with health and well-being (e.g. self-reported health, BMI) of people.
- Study the health service use of different groups of people (e.g. the unemployed) in relation to health service provision and accessibility.

- Residential area offers a setting for human action and different possibilities and risks that influence the well-being and health of individuals.
- Time of residence in certain places, migration of people
- Such groups that spent a large part of their daily lives in their local residential area (e.g. elderly, unemployed) may be particularly vulnerable to positive or negative health effects of their environment.

- Difficult to separate out effects of urbanisation or rurality from the more general contextual effects of socio-economic environment -> geographical accessibility is one factor
Geographical data

- Population density data (1 km² grids) from Statistics Finland
  - Close residential environment
    1-5 inhabitants/km²: areas of scattered settlement
    6-20 inhabitants/km²: rural areas proper
    21-100 inhabitants/km²: rural-urban transition zone
    101-1000 inhabitants/km²: built-up areas and suburbs
    Over 1000 inhabitants/km²: high-rise centres
  - Municipality centre: the densest populated grid
- Finnish street and road network data (Digiroad)
- Road distance (km) from cohort members home to municipality centre

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<tbody>
<tr>
<td>Population density in 1x1 km² *</td>
<td>Road distance to closest convenience store</td>
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<tr>
<td>Living in population centre, in village, in small village or in countryside *</td>
<td>Walkways/cycleways</td>
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<tr>
<td>Road distance to local service centre</td>
<td>Sport facilities, parks ***</td>
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<td>Buildings* (shops, restaurants, education, assembly, social and health care, industrial buildings)</td>
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<td>Land use/land cover (Corine) *</td>
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<td>Economic dependency ratio in municipality level**</td>
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<td>Distance to health centres (1997 and 2015), central hospitals</td>
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*From the monitoring system of Spatial Structure and Urban Form (YKR) which is information system maintained by the Finnish Environmental Institute (SYKE), ** Statistics Finland, *** Geographical database for sport facilities, Lipas
Social and health services research – GIS-based approach

• Database of health and social services.

• Health service provision is usually found to be less important for health than other socioeconomic conditions.

• Not only health service matter, but also social services are important

• Are people being guided to use health services more easily in areas where there are also a lot of other health related services, e.g. social workers available?
Scenario of services on wheels

- If there are further cut downs in health services, could mobile services bring health care to people in remote areas?
- Based on research report with Finnish Innovation Fund (SITRA) and paper to be presented in AGILE 2016 with Ossi Kotavaara, PhD, and professor Jarmo Rusanen.

- Involves population residing in grids situated over 30 km road distance from nearest health centre.
  - About 29000 people would benefit from mobile services.
  - About 3000 people would reach services from distinctly shorter distances.
THANK YOU!

Contact information:  

[tiina.lankila@oulu.fi](mailto:tiina.lankila@oulu.fi)
Geography Research Unit
University of Oulu