

G07 Spatial Dimensions of Demographic Transition: (De)Population, Ageing, Loneliness and Wellbeing

For Ordinary Sessions (O-)

Title: Do nature environments reduce mental health inequality in a super-aging society?

Evidence from South Korea

South Korea is experiencing one of the most rapid demographic transitions globally, characterized by accelerated population aging and persistently low fertility rates. As a result, the proportion of older adults is increasing sharply, particularly in rural and shrinking regions that are transitioning into super-aged societies. Alongside these demographic shifts, a growing body of research has documented elevated risks of depression, social isolation, and poor mental health outcomes among older populations. At the same time, strong capital-area concentration has intensified spatial inequalities in access to services, infrastructure, and environmental resources, further shaping regional health disparities. Within this context, nature environments have been consistently shown to produce positive mental health outcomes. Importantly, the concept of the equigenesis effect suggests that such benefits may be disproportionately concentrated among socioeconomically vulnerable populations, thereby reducing health inequalities rather than simply improving average health levels.

This study aims to examine whether the equigenesis effect of nature environments on mental health operates differently between super-aged regions and non-super-aged regions in South Korea. Specifically, we investigate whether nature environments mitigate mental health inequalities among older adults through distinct mechanisms depending on regional demographic and spatial contexts. Using nationally representative regional data, we apply quantile regression models to assess how nature environment exposure influences different points of the mental health distribution, with a focus on lower quantiles representing more vulnerable populations.

We hypothesize that in super-aged regions, nature environments primarily reduce mental health inequality by enhancing social connectedness and compensating for service accessibility limitations, whereas in non-super-aged or metropolitan regions, their effects may operate more through environmental stress reduction pathways such as heat mitigation, air quality improvement, and opportunities for physical activity. We expect to find stronger equigenesis effects at lower mental health quantiles in super-aged regions, indicating greater benefits among the most vulnerable older adults. By integrating demographic transition, spatial inequality, and environmental health perspectives, this study provides policy-relevant evidence for designing targeted nature-based interventions to reduce mental health inequalities in rapidly aging societies.

Keywords (Max. 5): Equigenesis, Health Inequality, Ageing, Mental Health