



## Editorial

### The spatial relationship between emerging infectious diseases and urban characteristics is the subject of an exploratory analysis

Kaushik RH<sup>1</sup>

<sup>1</sup> Department of Biology and Microbiology/Veterinary Science

**Corresponding author:** : Kaushik RH, Department of Biology and Microbiology/Veterinary Science

South Dakota State University, USA  
E-mail: radhey.kaushik@sdsstate.edu

The recent emergence of infectious diseases in the current global context of interacting societies includes dynamic interactions. The aim of this research is to look into the spatial associations between urban characteristics and the emergence of infectious diseases, taking into account socio-ecological factors. We studied 225 spatial units in South Korea, where there was a re-emergence of measles and a 2015 outbreak of Middle East Respiratory Syndrome, using exploratory spatial data analysis and spatial regression between infectious disease emergence data and 14 urban characteristics. The emerging infectious diseases had spatial dependency, according to exploratory spatial data analysis.

Urban characteristics had various effects depending on the type of infectious disease, according to spatial regression models. In water- or food-borne diseases, as well as manageable infectious diseases, characteristics linked to low socioeconomic status were common. Intermittent infectious disease epidemics are linked to good living conditions and the ability of the community to respond. Other infectious diseases that are connected to the environment are distinct from new infectious diseases. This research proposes spatial policies to avoid infectious diseases by taking into account the spatial relationships between urban characteristics and infectious diseases, as well as public health management.

Despite developments in infectious disease control, emerging infectious diseases such as SARS (Severe Acute Respiratory Syndrome) and Influenza A virus subtype H1N1 pose a new challenge to public health (World Health Organization, 2014).

Infectious diseases and public health have been addressed in urban studies and planning for a long time. Ebenezer Howard suggested a garden city in 19th-century England as a way to create a living atmosphere free of infectious diseases. The first spatial study connecting infectious disease emergence to urban environments was created by Dr. John Snow, who discovered the cause of cholera in 1854. Improved urban capacity to prevent and contain infectious diseases after they arise has recently resurfaced as a major concern, and the need to incorporate infectious disease prevention policies into urban planning is gaining traction.

This topic has primarily been approached from a medical perspective, with emphasis on the descriptive characteristics of infectious agents and pathways.

On COVID-19, some case studies evaluating environmental factors such as temperature, precipitation, and population density relation reduction and deindustrialization characteristics have been conducted. These research, on the other hand, concentrate on COVID-19 descriptive trends and ignore the relationship between current and new infectious diseases, as well as infectious disease factors linked to urban characteristics.

The aim of this research is to look into the spatial relationship between infectious disease outbreaks and urban characteristics, taking into account socio-economic factors. The research centred on South Korean towns, and the study used city/county/district (si/gun/gu) local government units.

Because of its high level of urbanisation and the apparent emergence or re-emergence of infectious diseases, South Korea was chosen. After its industrialization in the 1960s, Korea has experienced rapid urbanisation, with 81.9 percent of the population living in urban areas in 2009. (OECD, 2012). In addition, beyond the Middle East Respiratory Syndrome (MERS) outbreak in 2015. Additional phenomena have been observed, such as the re-emergence of measles in nearly 50,000 people between 2000 and 2001.

**Citation:** Kaushik RH (2021) The spatial relationship between emerging infectious diseases and urban characteristics is the subject of an exploratory analysis. *J Immunol Tech Infect Dis* 10:2



