

Impact of Urbanisation on COVID-19: Diversity in Virulence

Sir,

Exponential urban growth has a profound effect on global health. Factors associated with urbanisation include unhealthy dietary habits, physical inactivity, pressures of mass marketing, automation, pollution, violence, accidents, stress and harmful use of alcohol. Such multi-host communities' interfaces have led to cross-species transmission and emergence of new pathogens.¹ Since the outbreak of novel coronavirus disease 2019 (COVID-19) pandemic, a diverse virulence pattern exists all around the globe. Many factors have been thought to be linked with this diverse virulence of COVID-19 including hygiene hypothesis, geographic diversity, BCG vaccination, and influenza seasonal outbreaks.² Relationship of urbanisation and severity of disease can be studied thoroughly with the help of United Nation classification of countries in light of economic indicators³ and WHO nation-wise data on COVID-19.

Virulence of COVID-19 can be determined by number of deaths and complications. Complications entail acute respiratory distress syndrome (ARDS), coagulopathies and multi-organ dysfunction, cardiovascular complications, and phenomenon of cytokines storm syndrome (CRS).⁴ Developed countries, including middle-income countries and high-income countries, have on average, total confirmed cases of 91262.8. The mean total number of deaths may be 6426.1. Least developed countries (LDCs) are low-income countries confronting severe structural impediments to sustainable development. Unlike their high vulnerability to economic and environmental disasters, the impact of COVID-19 on health of their inhabitants has been very lenient. Total average confirmed cases were 2777.7 and the average number of deaths equaled 55.^{4,5} In developing countries, average total number of confirmed cases have been 18213.4 and the total number of deaths have been 693.6.⁵

Developed countries have a trend of concentrated living, centrally air-conditioned spaces, public transport, and industrialisation; making them more prone to spread this infection with grave prognosis. However, rural areas have a low population density, open spaces, less air pollution, and small settlements, which all reduce the morbidity and show better prognosis. LDCs, even though having a lesser budget, naturally

displayed restricted trends in spread of COVID-19. Urbanisation appears to be an indispensable risk factor for COVID-19's severe outcome. Its inclusion is an imperative component in the risk scores for COVID-19's severity assessment. This can help healthcare systems to direct their resources to more affected areas in light of expressed virulence in a specific territory. An epidemiological survey designed on parameters of developed, least developed and developing countries, including urban and rural percentages will be an interesting cross-section for studying the dynamic virulence of COVID-19. A rational increase in testing facility in LDCs and developing countries may establish a more accurate relationship between COVID-19 pandemic and urbanisation.

CONFLICT OF INTEREST:

Authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

MHA: Concept and design.

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