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The environment, epidemics, and human health

In this editorial piece, the Editors of the Virtual Special Issue (VSI) “The environment, epidemics, and human health” comment on the papers accepted for publication, which were selected after peer-reviewing among all those manuscripts submitted to the Special Issue. In view of the title of the VSI, it is clear that its aim goes beyond the COVID-19 pandemic, trying to explore relations among environmental aspects, any kind of epidemics, and human health. However, COVID-19 is still hitting as a global and current main issue, causing that manuscripts dealing with this disease and the SARS-CoV-2 virus are of high relevance in the whole set of research papers published.

1. Introduction

The current COVID-19 pandemic and its relations with environmental factors have received great attention, and even new studies are being designed, carried out, and published. In fact, some of the Guest Editors of this VSI have previously edited other Special Issues focusing on the SARS-CoV-2 coronavirus and other pathogenic microorganisms (for instance Núñez-Delgado, 2020; Núñez-Delgado et al., 2021a, 2021b).

In addition, it is sure that SARS-CoV-2 is just one of the pathogens that have caused and will cause epidemics (and pandemics in some cases). The relations between environmental factors and outbreaks of new epidemics/pandemics, caused by existing and/or novel pathogens, are key aspects to be aware of and to continue to investigate. The anthropogenic pressure on the environment may facilitate that some reservoirs to people, and research on these facts would allow define further details not well known up to now. Also, additional in-depth investigations about relations between epidemic/pandemic outbreaks and environmental factors in areas where humans live and are affected by these outbreaks could give new responses facilitating a suitable management of these situations. This activity often needs multidisciplinary competencies and approaches.

With this in mind, the Editors of the Special Issue made a Call inviting teams of researchers having background in these fields to submit high-quality manuscripts on the subject, including experimental results, discussion and reflections derived from available data. The Editors thought that it is a hot theme, of clear interest for the scientific community and for the whole society, and the result of the VSI has proven that efforts in this line are justified.

Below, the Editors comment on the papers finally accepted/published on July 15, 2022, selected among the 48 submissions received within the VSI.

2. Comments on papers published in the Virtual Special Issue

Most of the papers published in this VSI deal with the SARS-CoV-2 coronavirus and the COVID-19 pandemic. Among them, Coccia (2022a) presented his research on “COVID-19 pandemic over 2020 (with lockdowns) and 2021 (with vaccinations): similar effects for seasonality and environmental factors”, Escario et al. (2022) studied “COVID-19 related policies: The role of environmental concern in understanding citizens’ preferences”, whereas the paper by Gómez-Carballa et al. (2022) was “A multi-tissue study of immune gene expression profiling highlights the key role of the nasal epithelium in COVID-19 severity”.

Also focused on the current pandemic, Han et al. (2022) showed the results of “Impact analysis of environmental and social factors on early-stage COVID-19 transmission in China by machine learning”, while the research by Hoogeveen et al. (2022) was “Environmental factors and mobility predict COVID-19 seasonality in the Netherlands”. Khandia et al. (2022) presented “Emergence of SARS-CoV-2 Omicron (B.1.1.529) variant, salient features, high global health concerns and strategies to counter it amid ongoing COVID-19 pandemic”, and Manik et al. (2022) showed their results on “Impact of climate on COVID-19 transmission: A study over Indian states”.

Additional publications were those by Liu et al. (2022) “The impact of crowd gatherings on the spread of COVID-19”, Lu et al. (2022) “Wastewater surveillance of SARS-CoV-2 in dormitories as a part of comprehensive university campus COVID-19 monitoring”, and Song et al. (2022) “High altitude Relieves transmission risks of COVID-19 through meteorological and environmental factors: Evidence from China”.

Not limited to the current pandemic, Brew et al. (2022) showed their results on “Double jeopardy-pregnancy and birth during a catastrophic
bushfire event followed by a pandemic lockdown, a natural experiment”, Coccia (2022b) on “Improving preparedness for next pandemics: Max level of COVID-19 vaccinations without social impositions to design effective health policy and avoid flawed democracies”, Kumar et al. (2022) on “The practicality and prospects for disinfection control by photocatalysis during and post-pandemic: A critical review”, Lizé et al. (2022) on “Prenatal exposure to organophosphate pesticides and autism spectrum disorders in 11-year-old children in the French PELAGIE cohort”, Nair et al. (2022) on “A review of strategies and their effectiveness in reducing indoor airborne transmission and improving indoor air quality”, Qin et al. (2022) on “Association between averaged Meteorological Factors and Tuberculosis Risk: A Systematic Review and Meta-analysis”, and Zhu et al. (2022) authored “Prevalence of thyroid nodules and its association with water iodine among Chinese men and women”.

The Editors of this VSI would like that these results could stimulate further research on the subject, helping to provide solutions to these highly relevant environmental and health problems.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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