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Mini Review

Anthropocene Public and Planetary Health

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Abstract

Technological developments in the anthropocene era have improved the human lifestyle but created other issues. Public and planetary health is affected by these issues, i.e., global temperature increase, pollution, diseases and species extinction. Green energy usage, species conservation and sustainable development, on individual, national and international levels, can improve public and planetary health.

Keywords: Anthropocene; Public health; Planetary health; Sustainable development; Clean air

Introduction

Anthropocene is the era post-1850s when anthropogenic actions altered Earth's biophysical systems [1]. The industrial revolution's technological innovations improved humans' lives and public health, i.e., the discovery of antibiotics (penicillin by Alexander Fleming), which treated bacterial diseases [2] and prevented plaques. Similarly, anticancer and antiviral drug discoveries improved public health. Anthropocene introduced countless technologies that facilitate every aspect of humans in aquatic and terrestrial ecosystems. However, the large-scale industrialization-related pollutants release, infrastructure development and changes in biophysical systems have repercussions for public health [3]. This mini-review considers anthropocene, public and planetary health.

Air Pollution

The industrial revolution has introduced gaseous (CO, CO_2, CH_4, SO_2, NO, NO_2, etc.), metallic (Pb, Cr, Mn, Fe, etc.) and microplastic pollutants [4-6] into the atmosphere. Production, transportation and consumption technologies account for global pollution. Air pollution has caused climate change and affects aerobiology [7-9]. Air pollution silently causes several lethal diseases on a global scale, i.e., cardiac disease, Chronic Obstructive Pulmonary Disease (COPD), and cancers [10-12]. Climate change affects pollen concentrations in the air and their allergenicity and enhances pollen allergy burden [13,14]. Human beings' exposure to polluted air and allergenic bioaerosols in the atmosphere during breathing affects public health and causes a huge economic burden on the global health budget. Additionally, a polluted atmosphere risks planetary health.

Planetary Health

Global temperature has increased about 1.5 °C due to atmospheric pollution [15], which alarms the health and survival of many species. Globally, adverse impacts have been observed on ecosystem structure changes, species range shifts and phenology timing shifts due to increasing temperature. Similarly, climate change badly affects food production, human health and wellbeing and infrastructure and human settlements [15]. Adverse micro and macroscale changes in ecology, food systems, environmental degradation, microbial ecosystems and

human lifestyle in the anthropocene penetrate the molecular level. These changes are affecting planetary health by non-communicable diseases and chronic pandemics. Large-scale threats to public and planet health require urgent attention at the individual, national and global policy levels. Climate change and planetary health degradation have created a window of opportunities to steer the world in the right direction through sustainable developments. Public and planetary health improvement lies in green energy consumption, sustainable technologies and infrastructure developments and endangered species conservation [16,17]. Such mega-scale changes will improve air, food and water quality, which are basic requirements for public and planetary health.

Conclusion

The Anthropocene era has yielded technological developments for human well-being that have raised secondary issues to public and planetary health. These issues include global temperature increase, pollution, diseases and species extinction. These humongous risks can be avoided through sustainable development on individual, national and international levels to make the world a better place to live.

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