**Review Article**

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**Holistic Perspective of the Impact of COVID-19 on Global Populations as Morbidity and Mortality: Are Humanities Ready to Face Future Pandemics?**

**Abstract**

Currently, the spotlight is directing attention away from the recent Corona epidemic, but this should not pass without learning some important lessons. The pandemic continues to persist, with 662 million new cases by 2023. The arms race between nations has led to increased investment in bioweapons, highlighting human involvement. Despite advancements, humanity is ill-equipped to handle microbial epidemics, leading to a reevaluation of public health officials' safeguards.

Current SARS-CoV-2 deaths are low, but some other viral diseases have high fatality rates. The WHO database provides a comprehensive view of COVID-19 cases and fatalities, enabling public health measures to be implemented globally according to a recent review until 2023.

 Major affected nations in terms of total morbidities and mortalities include the USA, India, France, Germany, Brazil, Japan, Russia, Turkey, Spain, Viet Nam, Australia, China, Argentina, Mexico, Indonesia, Poland, Colombia, Austria, Portugal, Greece, Ukraine, Chile, and Malaysia.

The coronavirus seems to affect developed countries more than developing ones, but efficiency in case collection affects the credibility of the overall data interpretation. Despite progress, much must be done to combat the milder disease. Modeling disease spread helps understand community characteristics, aiding public health authorities in management and control measures. Collaboration and quantitative risk index projections are crucial for pandemic prevention and control.

**Keywords:** COVID-19, Morbidity, Mortality, Public Health, Pandemic, Modeling

**Introduction**

**Importance of Projection for the Impact of COVID-19 on Human Health Globally**

Despite the fact that the world has been watching the most recent horrific conflicts and catastrophes around the globe, particularly given the disastrous fallout that has negatively impacted the economies of nearly every nation on the planet1,2. The media's preoccupation with the ongoing military and political conflicts, arms competition and the following economic distresses distracted them from covering the most recent updates about the coronavirus outbreak and its associated tragedies at all levels, including political and economic. By focusing on a holistic view, the realistic impact of the outbreak on human communities and countries could be understood and prediction of future catastrophic events could be made.

Humanity might deviate from sight of the reality that, despite widespread evidence of significant scientific and technological advancements, the world is still ill-equipped to handle microbial epidemics3. It is impossible to completely rule out the possibility of further deadly virus outbreaks in the future; thus, public health officials have to reevaluate their safeguards and readiness. When expressed as a daily mortality/morbidity percent of the infected population, the reported deaths from the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are very low, ranging from less than 5% to less than 2% in the current outbreak (if compared with other more dangerous viruses that might reach 50% to 80% lethality rates)4,5. Fruit bats (*Rousettusaegyptiacus*) are a natural host of Marburg viral disease (MVD), an example of the latter with high case fatality rates.

To implement public health measures for the pandemic within the community, the chance to view the daily cases and fatalities recorded in the complete database of COVID-19 was therefore taken advantage of6. Data processing was carried out by calculating daily records throughout the WHO regions and countries subcategories, which will shed light on the holistic picture of the pandemic around the world till the beginning of the year 20237. In the same vein, previous studies focused on cumulative datasets that provided different perspectivesfor pandemic data analysis1-8. Figure 1 shows the distribution of disease severity based on the countries within the WHO categories.

**Distribution and Pattern of the Recent Global COVID-19 Pandemic and What is behind It**

Major affected nations—as total morbidities and mortalities—were shown, starting with the USA, followed by India, then France, Germany, Brazil, Japan, the Republic of Korea, Italy, Great Britain, the Russian Federation, Turkey, Spain, Viet Nam, Australia, China, Argentina, the Netherlands, the Islamic Republic of Iran, Mexico, Indonesia, Poland, Colombia, Austria, Portugal, Greece, Ukraine, Chile, and Malaysia. The European (EURO) and American (AMRO) regions contributed more than 65% of the total casualties6,8. The comprehensive contribution, as illustrated in Figure 2, showed that the major affected countries were from the northern hemisphere of Western nations. Also, the number of affected populations increased every year from 2020 to 2022 globally.

The overall picture shows that the pandemic waves would not subside swiftly, and the virus finds its way to last for longer periods with variable symptoms, with the total sum of new emerging cases reaching a census of 662 million of the global population by the beginning of the year 20239-11. The arms race between the leading nations in military advancement has stimulated investment in the application of bioweapons with genetically modified virulent microbes as a source of weapons of mass destruction and devastation of life12-17. Thus, the role of human involvement in such incidents cannot be ruled out.

The COVID-19 pandemic has had a profound impact on global populations, both in terms of morbidity and mortality18,19. As the virus continues to spread, it has become increasingly clear that humanity is ill-prepared to face such a devastating global health crisis. In order to effectively combat future pandemics, a holistic perspective is needed to address the various factors that contribute to their spread and severity20.One important lesson that must be learned from the COVID-19 pandemic is the need for increased investment in public health infrastructure21-25. This calls for a reevaluation of the safeguards put in place by public health officials, as well as a commitment to strengthening global health systems.

While the current fatality rate of SARS-CoV-2, the virus that causes COVID-19, is relatively low, other viral diseases have much higher fatality rates26-29. Therefore, it is crucial to take a comprehensive view of COVID-19 cases and fatalities in order to implement effective public health measures30-33. The World Health Organization's database provides valuable data that can be used to inform global pandemic response strategies.





**Figure 1: Sum of emerging cases and deaths globally by country and WHO regions**





**Figure 2: Contributions to total cases and deaths by time and WHO regions**

**Understanding Impact of COVID-19: A Drive for Preparedness for Future Catastrophes**

In order to combat the spread of COVID-19 and future pandemics, it is crucial to understand how diseases spread within communities34-37. Tracking disease spread can provide valuable insights into community characteristics, which can then be used to inform public health authorities on management and control measures38,39. Collaboration between countries and the use of quantitative risk index projections are essential for effective pandemic prevention and control40,41. The consequences of the recent outbreak of coronavirus disease in 2019 on human populations can be psychosocial due to the mental health implications of increased stress, anxiety and depression42-44. Also, social isolation and loneliness affect well-being and resilience45-47. Needless to say, under stressful situations of epidemics, stigmatization and discrimination would impact psychological health and access to healthcare facilities.

The economic impact of COVID-19 cannot be underestimated48. For instance, consideration of unemployment and poverty would be challenging in accessing healthcare and essential resource49. Moreover, disruption of supply chains with implications for food security and access to medications should also be borne in mind50-52. Another aspect that should be emphasized is economic inequality and the associated exacerbation of existing disparities and social determinants of health53-55. Although the available information shows that developed countries are more affected by the coronavirus than developing countries in terms of the number of cases and deaths, the difference in the efficiency of the system of collecting cases by official authorities plays a major role in the credibility of the recorded information, yet socioeconomic, demographic and global health infrastructure factors cannot be ruled out56-59. They include a complex combination of community variables embracing:1-Disparities in access to healthcare, poverty, education level.2-Age, gender, pre-existing health conditions. 3-The capacity of healthcare systems and availability of resources, respectively.

**Epidemics and Modeling for Effects of Diseases on Communities**

Modeling of the disease has helped in understanding the characteristics of the disease spreading through the community, and the theoretical aspects of the dissemination process should support the public health authorities in a holistic understanding of the management and control measures needed to mitigate the risk of the epidemic effect on the community and the consequent outcomes for the countries60-61. This would be predisposing for the projection of a quantitative risk index to identify and control the influential factors that contribute to the persistence of the disease63. In the end, national and international collaboration in the face of pandemics would be indispensable to save humanity during the time of catastrophic events to protect future generations and keep their rights to a safe and healthy life.

However, it cannot be underestimated that although many studies have been done regarding this epidemic, on the ground it cannot be ignored that despite the amazing progress that humanity has achieved in all areas of life, there is still much that must be done to establish effective foundations to confront epidemics practically, especially the much more dangerous types, taking into consideration that this disease is considered much milder than many others that have struck humanity before. This signals an alarm that should not be passed unnoticed; otherwise, the hard lessons that have been delivered by the latest pandemic will be wasted.

**Conclusion**

In conclusion, the COVID-19 pandemic has highlighted the need for a holistic perspective when assessing the impact of infectious diseases on global populations. The ongoing pandemic and the potential for future pandemics underscore the importance of investing in public health infrastructure and reevaluating current safeguards.

The long-term psychological impact of the pandemic on human health might affect directly or indirectly the political and decision-making elites, with the consequent actions not affecting national states but spreading internationally to impact other countries with uncalculated effects. By taking a comprehensive approach to pandemic prevention and control, humanity can better prepare itself to face the challenges of more hazardous infectious diseases and fatal epidemic incidents.

**Conflict of Interest**

None to declare.

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