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REVIEW ARTICLE

A HOLISTIC PERSPECTIVE ON THE IMPACT OF COVID-19 ON THE GLOBAL POPULATION IN TERMS OF MORBIDITY AND MORTALITY RATES: IS HUMANITY READY TO FACE FUTURE PANDEMICS?

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Abstract

For now, the spotlight is turning away from the recent Corona epidemic, but this should not pass without some important lessons being learned. Knowing that the epidemic is continuing and spreading, with 662 million new cases recorded in the year 2023. The arms race between countries has led to increased investment in biological weapons, highlighting the military human participation in spreading epidemics. Despite scientific and technical progress, humanity is not equipped to deal with microbial epidemics, and therefore the safeguards taken by public health officials in combating epidemics must be re-evaluated. The current mortality rate for SARS-CoV-2 is low, but some other viral diseases have high mortality rates, so if a pandemic occurs due to it worldwide, as happened with COVID-19, it will be a disaster. The WHO database provides a comprehensive view of COVID-19 cases and deaths, enabling public health measures to be implemented globally according to a recent revision until the end of 2023. Major affected countries in terms of total morbidity and mortality 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 appears to affect developed countries more than developing countries, but the efficiency in collecting cases affects the reliability of interpreting data in this way in general. Despite the progress made, much effort remains to be made to combat the disease in its mild form at this time. Modeling disease spread helps understand community characteristics and assists public health authorities with management and control measures. Collaboration and quantitative risk index projections are crucial for pandemic prevention and control.
Keywords: COVID-19, modeling, morbidity, mortality, public health, pandemic.

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 planet[1,2]. The media's preoccupation with the ongoing military and political conflicts, arms competition and the following economic distress 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 the sight of the reality that, despite widespread evidence of significant scientific and technological advancements, the world is still ill-equipped to handle microbial epidemics[3]. 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 Corona virus2 (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 (*Rousettus aegyptiacus*) 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 of[6]. 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 2023[7]. In the same vein, previous studies focused on cumulative datasets that provided different perspectives for pandemic data analysis[1-8]. Figure 1 shows the distribution of disease severity based on the countries within the WHO categories.

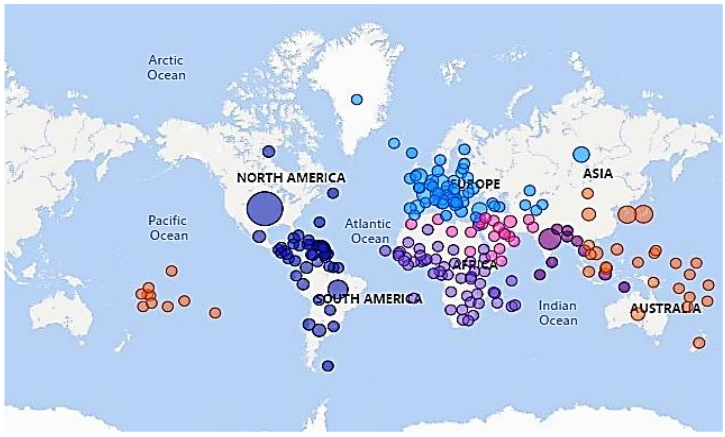

Figure 1: Emerging cases and deaths globally by country and WHO regions.

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 casualties[6,8]. The comprehensive contributions, 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 would find 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 2023[9]. 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 life[10]. 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 mortality[11,12]. 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 severity[13]. One important lesson that must be learned from the COVID-19 pandemic is the need for increased investment in public health infrastructure[14]. 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 rates[15]. Therefore, it is crucial to take a comprehensive view of COVID-19 cases and fatalities in order to implement effective public health measures[15]. The World Health Organization's database provides valuable data that can be used to guide global pandemic response strategies.

Understanding the 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 communities[16-19]. Tracking disease spread can provide valuable insights into the community characteristics, which can then be used to inform the public health authorities on management and control measures[20,21]. Collaboration between countries and the use of quantitative risk index projections are essential for effective pandemic prevention and control[22,23]. 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 depression[24]. Also, social isolation and loneliness affect well-being and resilience[25,26]. Needless to say, under stressful situations of epidemics, stigmatization and discrimination would impact psychological health and access to healthcare facilities.

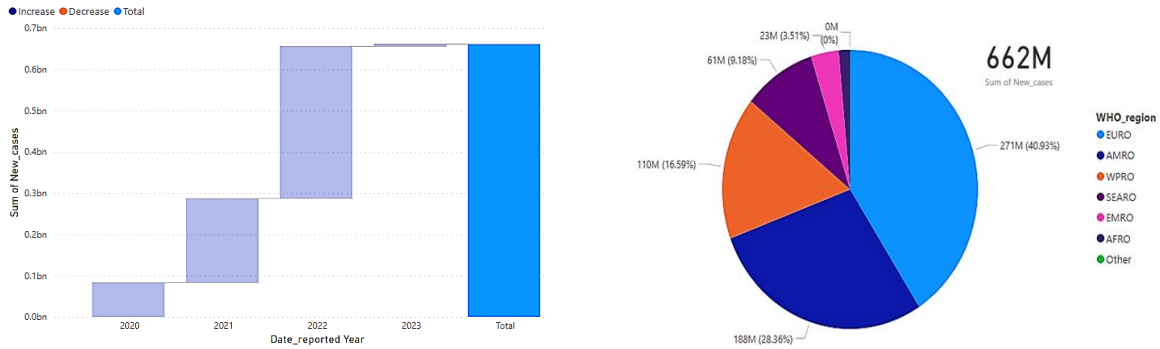

Figure 2: Contributions to total cases and deaths by time and WHO regions.

The economic impact of COVID-19 cannot be underestimated[27]. For instance, consideration of unemployment and poverty would be challenging in accessing healthcare and essential resources[28]. Moreover, the disruption of supply chains with implications for food security and access to medications should also be borne in mind[29-31]. Another aspect that should be emphasized is economic inequality and the associated exacerbation of existing disparities and social determinants of health[32]. 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[33,34]. 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 countries[35]. 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 disease[36]. 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.

CONCLUSIONS

In conclusion, the COVID-19 pandemic has highlighted the need for a holistic perspective when assessing the impact of infectious diseases on the global populations. The ongoing pandemic and the potential for future pandemics underscore the importance of investing in public health infrastructure and reevaluating existing safeguards. The long-term psychological impact of the pandemic on human health might directly or indirectly affect the political elites and decision-makers, with the consequent actions not affecting national states but spreading internationally to impact other countries with unmeasured effects. By taking a comprehensive approach to the pandemic prevention and control, humanity can better prepare itself to meet the challenges of more hazardous infectious diseases and fatal epidemic incidents.

DATA AVAILABILITY

Data will be made available on request.

AUTHOR'S CONTRIBUTION

Eissa ME: Writing original draft, review, methodology, data curation, literature survey, editing.

CONFLICT OF INTEREST

None to declare.

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