

COVID-19: A Non-Living Particle Which Could Reshape Human Life

Hesham A. El Enshasy^{1,2,3}

¹Institute of Bioproduct Development (IBD), Unviersiti Teknologi Malaysia (UTM), Skudai, Johor, Malaysia.

²School of Chemical and Energy Engineering, Faculty of Engineering, Unviersiti Teknologi Malaysia (UTM), Skudai, Johor, Malaysia.

³City of Scientific Research and Technology Applications, New Burg Al Arab, Alexandria, Egypt.

<http://dx.doi.org/10.13005/bbra/2824>

(Received: 20 April 2020; accepted: 21 April 2020)

This issue comes in very critical time where many countries are in either full or partial lockdown due to the emergence of the new pandemic viral infection caused by the most googled word “COVID-19”. This novel virus belongs to the corona virus family (Coronaviridae), and designated as 2019-nCoV. This virus was first reported in central China city “Wuhan” at late November 2019. However, the number of cases outside China increased 13 folds by 11 March 2020 in only two weeks’ time. This make the WHO Chief Dr. Tedros Adhanom Ghebreyesus to declare it as pandemic disease.¹ As of 15 June 2020 (the time of writing this editorial), more than 8 Million cases and 436 Thousands deaths have been reported in 215 countries.²

This virus belongs to the family of viruses which cause different symptoms like

fever, headache, breath difficulty, pneumonia like other lower respiratory tract infection.³ However, this is considered the third and the most lethal coronavirus outbreak after the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) in 2002-2003 and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in 2012.⁴⁻⁶ However, the number of cases and mortality of the two previous outbreaks of SARS-CoV and MERS-CoV were much less than the current pandemic outbreak caused by COVID-19 which put global health system on high alert.

The Ease of Move from Epidemic to Pandemic

Nowadays, the world is considered as big village with ease of transport of people and goods. Therefore, the time required for any strong pathogenic diseases to move from epidemic to pandemic become very short. The short global

*Corresponding author E-mail: henshasy@ibd.utm.my



spreading time taken by COVID-19 was also driven by the little information available about the mode of transmission of the this new virus from animal to human and from human to human, and the identification of the risk group. In addition, at the beginning of the outbreak of this virus, high temperature was the only main symptom for diagnosing the COVID-19 carriers in the crowd. Later on, this was not considered as strong indicating measure as some many positive cases were symptomless. Therefore, many countries used quarantine strategy for 14 days to make the positive cases more obvious during this (proposed) incubation period of the virus. Later on, the 14 days quarantine was reported as not enough as some cases showed symptoms after longer time. However, like many other pathogens, the severity of COVID-19 symptoms is highly dependent on host immunity, virulence, the viral load, and even more recently the blood group. These all together caused some delay in putting proper regulations and guidelines as preventive actions to control borders. Therefore, the large number of movement of people from China to outside (before the declaration of COVID-19 as pandemic disease) beside our little understanding about the mode of transmission and symptoms of this virus caused rapid distribution of the disease worldwide.

The Impact of COVID-19 on Health System and Beyond

The impact of Covid-19 will be not limited to the health system and how the health system in each country or region can tolerate the rapid increase in cases but the economic and social impact are of high concerns as well. The direct impact was the interruption of global trade and supply chain which lead to recession and asset price depreciation.⁷ After only four months of COVID-19 outbreak, the second challenge become food security. Even though, in all lockdown countries the food supply chain was waived from any shutdown or movement restrictions, However, the food supply chain have been heavily affected in some regions due to the shortage of the local supply (due to the less movement of labor and the shutdown of indirect supporting industries). In addition, many countries stop exporting food to secure enough reserve for local consumption market during this crisis.⁸⁻¹⁰ Education was also affected and many education institutions in all

levels (schools, universities, academy, etc...) move to on-line classes to overcome the movement control act. However, the negative impact of COVID-19 was less in more automated industries which not highly dependent on manpower in some part in the world. This showed the importance of automation and Industry 4.0 in industrial sectors. On the other hand, industries which dependent on people movement such as aviation and tourism were almost in shutdown. In fact, the real negative impact of COVID-19 on the global economy cannot be estimated for the time being. However, the severity of this negative impact will be in parallel to the increase of cases with the absence of any potential efficient drugs or vaccines.

The Role of ICT to Reduce the Impact of COVID-19

No one can imagine how could be the negative impact of COVID-19 on human life if internet and supportive Information and Communication Technology (ICT) system were not exist. The current internet platform facilitated the fast transfer of information around the world which supported the healthcare sector worldwide by increasing the global public awareness of the disease (transmission, symptoms, health precautions, data of potential treatment protocols, etc...). In addition, the availability of information/news which updates health instructions in seconds after release facilitated to decrease the cases dramatically. A universal worldwide on-time validated information system which can provide the number of cases (active, recovered, dead, serious/critical, cases per million population, and total test run in each country) around the globe become available with full statistics.² This assisted the decision makers for proper and fast actions to design dynamic risk mitigation system in fighting against COVID-19. In addition, beyond the health sector, many businesses and education institutions were able to run most of meetings and classes using on-line platforms (Google meet, Skype, Whatsapp, Zoom, Webex, etc...) to overcome in part the negative impact of lockdown around the globe. E-commerce was also important to implement the movement control order and to ease the delivery of the daily essential needs of peoples while keep staying at home. These all together helped in disease control by keeping physical distance needed to decrease the spread of the disease with

minimal impact on socio-educational-economical activities.

The Life After COVID-19

The big question is now, will life after corona be the same like before?. I think in short- and mid-terms the answer is no but we hope life will be back to normal thereafter. However, the only thing I am sure about is that our life after COVID-19 will be not exactly like before. Therefore, more research is needed in different fields (Medical, Agriculture and food, Economy, Sociology, Logistics, Transportation, Tourism, and many other research areas) about the impact of COVID-19 on our life in omic/holistic approach. Understanding the impact of pandemic disease on our daily life will creates a new niche areas of research to help us not only to minimize the negative impact of COVID-19 but to design a pro-active novel solutions which will shape our life after COVID-19. To achieve this target, new integrations between two or more research fields such as (Socio-Agro-Economy, Biomedical-Informatics, Microbial-Immuno-Dynamics, Medical-Aerodynamic, etc...) are needed. This will not only help in case of the current crises, but it will act as pro-active dynamic science based technological platforms to provide fast, and efficient solutions in case of any future crisis.

Last but not least, if we look in human history, COVID-19 war will be for sure not the last between Human and Microbes. We have to be always alerted and ready to win with minimal efforts and with minimal losses as much as possible. This need more full cooperation between all nations with high transparency in exchange of knowledge and information. We live in one world, we face the same challenges, and global problems need global strong efforts to come up with proper and effective solutions. In the current borderless world, people should realize that when we face pandemic disease no one will be safe if other people on this earth are not safe as well. I would like to end this article by: The first who can predict life after COVID-19, will be the one who will lead.

REFERENCES

1. Coronavirus confirmed as pandemic by World Health Organization (11 March 2020). <https://www.bbc.com/news/world-51839944> (accessed April.25, 2020)
2. Wordometer: COVID-19 Coronavirus Pandemic). Last updated: June15, 2020, 20:00 GMT. <https://www.worldometers.info/coronavirus/>
3. Adhikari SP, Meng S, Wu Y-P *et al.* Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review. *Inf. Dis. Pov.* 2020; **9**:29. <http://doi.org/10.1186/s40249-020-00646-x>
4. Uhale SS, Ansar QB, Sanap S *et al.* A review on corona virus (COVID-19). *World J. Pharm. Life Sci.* 2020; **6**: 109-115
5. Fauci AS, Clifford Lane HC, Redfield RR. Covid-19- Navigating the uncharted. *The New Eng.J. Med.* 2020; **328**: 1268-1269. <http://doi.org/10.1056/NEJMe2002387>
6. Fahr AR, Channappanavar R, Perlman S. Middle East respiratory syndrome emergence of a pathogenic human coronavirus. *Ann. Rev. Med.* 2017; **68**: 387-399
7. Ayithey FK, Ayithey MK, Chiwero NB *et al.* Economic impacts of Wuhan 2019-nCoV on China and the world. *J. Med. Virol.* 2020; 1-2. <http://doi.org/10.1002/jmv.25706>
8. Coronavirus disease 2019 (COVID-19) Addressing the impacts of COVID-19 in food crises April–December 2020 FAO's component of the Global COVID-19 Humanitarian Response Plan <http://www.fao.org/3/ca8497en/CA8497EN.pdf> (Accessed on June. 12, 2020)
9. Vietnam's ban on rice exports still in force, government may set limit: traders. *Commodities (Reuters)* March 30, 2020/ 1.30 PM. <https://www.reuters.com/article/us-health-coronavirus-vietnam-rice/vietnams-ban-on-rice-exports-still-in-force-government-may-set-limit-traders-idUSKBN21H0GO> (Accessed on June. 10, 2020)
10. Lee, H (2020). Food security fears as starting to threaten Asian rice exports. *Market-Bloomberg (April 1, 2020, 5:48 PM GMT +8)*. Accessed on April. 16, 2020 <https://www.bloomberg.com/news/articles/2020-03-31/food-security-fears-starting-to-threaten-rice-exports-in-asia> (Accessed on June. 8, 2020)