Oman Medical Journal [2020], Vol. 35, No. 4: e159

Lessons to Learn from COVID-19

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ARTICLE INFO
Article history:
Received: 7 May 2020
Accepted: 18 May 2020

ONLINE:
DOI 10.5001/omj.2020.81

Dear Editor,

The ongoing COVID-19 pandemic and its subsequent health, social, and economic crises can teach us many lessons at different levels. First, at a health level, the pandemic underlines the importance of self-sufficiency in terms of essential food and health equipment such as protective masks, respirators, and ventilators, which were among the most controversial topics at the onset of the pandemic. The number of deaths and infections would have been reduced substantially if countries had sufficient stocks of these materials, and if people used protective masks at an early stage of the first infections. Regardless of all the unknown issues on its origin, first outbreak, and treatments that are still unavailable, COVID-19 opens a new window in the scientific history of contagious diseases.[1] The pandemic also emphasizes the fact that scientific knowledge is an effective and reliable source of information, without which nations, such as the Arab world, remain at the periphery. Rather than to be a mere watcher and consumer of (inaccurate) information produced here and there, the Arab world needs scientific and medical knowledge as a safeguard of public health to fight rumors and fake news and to reduce the human and social costs of the diseases. Health and epidemiology centers usually intensify their efforts under such circumstances, and specialists strive to study and understand the pandemic in all its aspects from the origin to the final stages of treatment. However, in the Arab world, there is a blatant lack of scientific infrastructures and scientific culture more generally.[2,3] Most of the current information about COVID-19, and other health and scientific issues in the Arab world, are based on and derived from abroad sources, be it reliable or not, despite the huge financial and scientific potentials of Arab countries.

The creation of well-funded and well-equipped scientific and medical research centers, such as the Arabic Institute of Medicine and/or Arabic Center for Sciences would remedy this drawback, and are already proposed.[4] These centers would help Arab scientists and physicians have a worthwhile contribution in the production of trustworthy scientific knowledge in the understanding of chronic and novel diseases and to get involved in finding adequate solutions to current and future health and environmental challenges. Autonomy and sufficient financial resources are necessary for the success of such establishments.

Another public health concern raised by the COVID-19 pandemic should be the question of food consumption on urban public transportation that might need to be reconsidered to reduce potential contaminations with food/airborne pathogens in mass transportation, particularly in urban subways.[5] It also highlights the importance of sustaining food production systems locally to feed the population with healthy foods when imports-exports are stopped or reduced, as is currently the case. This would also reduce potential infections with foodstuffs imported from overseas.

Second, the pandemic emphasizes the importance of human solidarity and social support for each other at the individual, collective, and state levels to reduce the multifaceted side effects of the pandemic. Homeless people and refugees are under double punishments (disease and homelessness) with the COVID-19 contamination risks. Decent accommodations for every citizen is essential, particularly elderly and those with chronic health conditions where lockdowns can be tolerated easier than in crowded settings as is the case in many countries where refugees, outside

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workers, and homeless people are at high risks of infection, particularly when sizable populations are experiencing homelessness and refugeless.[6,7] Using big data and 3D construction printers can be a useful tool to predict and construct a sufficient number of buildings to solve housing crises and to provide homes for all the inhabitants of a city or a country. The propagation of airborne diseases in people living in open environments can thus be significantly reduced.

Finally, COVID-19 emphasizes, more than ever, the need for regular 'industrial breaks' (short-term industrial lockdowns) with industrial activities reduced to the bare minimum to diminish pollution rates and improve air quality. This could be performed annually.[8] According to the European Environment Agency[9] and National Aeronautics and Space Administration Satellite data,[10] the ongoing lockdown and relating measures applied by many countries to slow down the pandemic have led to noticeable decreases in industrial activities (manufacturing, transportation, etc.), which in turn resulted in the decrease of pollution rates with particulate matter ($PM_{2.5}$ and PM_{10}) and nitrogen dioxide. Air pollution and COVID-19 are associated because airborne aerosols can serve as potential viral carriers that would increase the spread of the pandemic; hence, the recommendations of the World Health Organization to keep physical distances and wear protective masks. Consequently, short and regular interruptions or 'lockdown' of nonessential industrial activities for one or two weeks per year would improve air quality and health by reducing potential airborne infections, not only by the coronavirus, but also other potential pollution-associated illnesses. Otherwise, our planet might witness other widespread environmental and global health catastrophes with devastating consequences similar to those of the current COVID-19 pandemic, if not worse, if nothing is done to prevent them early. Short-term regular industrial lockdowns could be one of the efficient environmental actions to consider to curb climate change and its effects on the environment, public health, and the biosphere more generally and would be more tolerable and less constraining than the COVID-19 lockdown.

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