

COVID-19 Crucial Importance of Ecological Balance: Bangladesh Perspective

Shakeel Mahmood*

School of Humanities and Social Science, University of Newcastle, Callaghan NSW 2308, Australia

*Corresponding author: shakeel.mahmood@uon.edu.au

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Abstract The world is currently experiencing a devastating pandemic of an infectious disease called coronavirus disease 2019, or COVID-19. Many countries around the globe are now enforcing lockdowns to try to slow down the spread of the killer disease. Such restrictions and measures differ from country to country however usually involve cancelling public events, closing borders, closing schools and encouraging people to work from home. In Feb 2021, WHO said that there was still insufficient evidence to determine how the virus entered Wuhan, but that it was clear it was circulating elsewhere in Wuhan at the same time. In July 2020, an Oxford University expert believes that the novel coronavirus may not have originated from China, rather it stayed dormant across the world and turned up when the environment conditions were friendly for it to flourish. In 1999, Dr. M R Choudhury from Bangladesh indicated the infectious diseases are being controlled and are fading away has evidently been found to be incorrect. Further he maintained that it is quite obvious that microbes can strike us back whenever the delicate ecological balance is disturbed. Dr. Choudhury's prediction in June 1999, Oxford Professor's observation in July 2020 and recent WHO findings in Wuhan Feb 2021- all are similar. When the ecological balance is disturbed, humans must figure out a way to restore the ecological balance. It is crucial to eventually determine the origin. It will help us maintain ecological balance with future viruses.

Keywords: COVID-19, ecological restoration, Bangladesh

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1. Introduction

COVID-19 pandemic is the global public health emergency crisis causing acute infectious respiratory disease, which has brought even the most powerful nations to their knees. Around nine percent or almost 2 million of Dhaka city of Bangladesh residents could be COVID-19 positive with approximately 78 percent of them showing no symptoms, said a study jointly conducted by the Institute of Epidemiology, Disease Control and Research (IEDCR) and the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr, b). The percentage is much higher than the figure provided by the health directorate, which indicates there are many more undetected cases [1].

2. Current Global Pandemic Scenario

Coronavirus is spreading across the world, with more than 23 million confirmed cases in 188 countries. Cases of the disease are continuing to surge in many countries, while others, which had apparent success in suppressing initial outbreaks, are now seeing infections rise again. In terms of individual countries, India has the second highest

number of cases in the world, after the US. Brazil is third in number [2]. Brazil is the world's second-highest COVID-19 death toll and pushed its total to 196,000 and cases have also risen rapidly in Russia, France, UK and Turkey according to a survey [3].

3. Discovery of Viruses

Back in 1964, a B814 virus with a lipid coating first identified by Scottish virologist Dr June Almeida, (1930 -2007) at her laboratory in St. Thomas Hospital in London. A Doctor of Science, Almeida succeeded in that were previously unknown, including in 1966 a group of viruses that were later named coronavirus, due to their crown-like appearance. At the Ontario Cancer Institute Dr Almeida developed her outstanding skills with an electron microscope. She pioneered a method, which better visualised viruses by using antibodies to aggregate them [4].

In 1971, using her immune electron microscopy technique, Almeida made the landmark discovery that the hepatitis B virus had "two immunologically distinct components"— an "outer coat and a small inner component" [5].

The most obvious method of virus detection and identification is a direct visualization of the agent. The

morphology of most viruses is sufficiently characteristic to identify the image as a virus and to assign an unknown virus to the adequate family. Furthermore, certain non-cultivable viruses can be detected with electron microscopy [6].

4. History of Coronavirus

According to the Canadian study in 2001, about 500 patients were recognized as Flu-like system. 17-18 cases of them were confirmed as infected with coronavirus strain by polymerase chain reaction. Until 2002, corona treated as simple non-fatal virus. In 2003, numerous reports published with the evidences of spreading the coronavirus to many countries, such as Hong Kong, Singapore, Thailand, Vietnam Taiwan, and in United States America. In 2003, numerous case was reported of severe acute respiratory syndrome instigated by corona and their mortally more than one thousand patient. Nonetheless till total 8096 patient was confirmed as infected with corona virus. Therefore, in 2004, World Health Organization (WHO) and centres for disease control and prevention declared as “state emergency”. Another study by Hong Kong confirmed 50 patient of severe acute respiratory syndrome (SARS), whereas 30 of them confirmed as coronavirus infected. Saudi Arabian reports also stated several infected patient and deaths in 2012 with coronavirus, which published in Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) in 2003 [7,8,9,10]. COVID-19 was first identified and isolated from pneumonia patient was from Wuhan, china in late December 2019 [11,12]. As of November 2020, CDC revealed that the overall non-fatal cumulative valuation escalate from \$2.2 trillion to \$5.7 trillion, which is 30% of GDP. Because of the larger numbers of cases involved, CDC calculations suggest that non-fatal infections are as economically critical in the aggregate as finally fatal infections [13].

5. WHO Investigation in Wuhan, China 2021

In early February, 2021, World Health Organization (WHO) team in its one month visit to the Chinese city of Wuhan, where the outbreak first emerged at a seafood market in late 2019, said the team’s work had uncovered new information. WHO said that there was still insufficient evidence to determine how the virus entered Wuhan, but that it was clear it was circulating elsewhere in Wuhan at the same time. In the conclusion WHO ruled out the lab leak and accepting that COVID-19 could have originated outside of China. The team is also considering that the first human transmission took place across the border in Laos or Vietnam [14].

Investigators were looked for Chinese blood samples that could indicate that the virus was circulating earlier than first thought. Peter Ben Embarek, a member of the WHO said work to identify the coronavirus’s origins points to a natural reservoir in bats, but it is unlikely that they were in Wuhan. “This suggests that we cannot rule

out that it was circulating in other regions and the circulation was unreported,” he told the briefing. “And the conclusion was we did not find evidence of large outbreaks that could be related to cases of COVID-19 prior to December 2019 in Wuhan or elsewhere.” [14] This report again signifies that the virus may not originated from china.

6. COVID-19 not Originated in China

Rather than originating in China, COVID-19 may have been lying dormant across the world until emerging under favourable environmental conditions, an expert said on 06 July in the Science Focus. Prof. Dr. Tom Jefferson from the Centre for Evidence-Based Medicine at Oxford University has pointed to a string of recent discoveries of the virus’s presence around the world before it emerged in Asia as growing evidence of its true origin as a global organism that was waiting for favourable conditions finally emerge. Traces of COVID-19 found in sewage samples from Spain, Italy and Brazil, which pre-date its discovery in China [15]. Recent report from Reuters dated Jan 19, 2021 said, this virus might have been responsible for a spike in pneumonia cases in France, and few researchers believe it could have entered Wuhan from Europe [16]. It is crucial to eventually determine the origin. It will help us maintain ecological balance with future viruses.

In 1918, around 30% of the population of Western Samoa died of Spanish Flu, and they had not had any communication with the outside world. "The explanation for this could only be that these agents don't come or go anywhere. They are always here and something ignites them, maybe human density or environmental conditions, and this is what we should be looking for," he added. Coronavirus traces were found in Spanish sewage samples from March 2019, Reuters reported on June 29, 2020 [15].

7. Bangladeshi Scientist’s Stress on Ecological Balance

An internationally renowned medical microbiologist and recipient of first-ever Independence Day Award of Bangladesh (Medical Science, 1977), the late General M R Choudhury was an eminent medical scientist and physician of Bangladesh, the late Professor Emeritus Dr. Mahmudur Rahman Choudhury (1928 - 99) was a pioneer of immuno-electron microscopy in Bangladesh in 1978. D. Bact. from the University of London, awarded fellowships of the Royal College of Pathologists (FRCPath), London, the Royal College of Physicians, Edinburgh (FRCP), the American College of Physicians (FACP), and the Bangladesh Academy of Sciences (FAS). He was a member, Board of Trustees, icddr,b, and member of the World Health Organization (WHO) Expert Advisory Panel on Health Laboratory Services [17].

Prof. Choudhury mentioned in his book, ‘Modern Medical Microbiology’ (1999) in the section ‘Emerging and Re-emerging Infectious Diseases’: “The myth that infectious diseases are being controlled and are fading

away has evidently been found to be incorrect. There exist definite indications that alterations, which we make in our lifestyles and environment, could have profound impacts on the dynamic biological changes in the microbial world. The results can be disastrous. It is quite obvious that microbes can strike us back whenever the delicate ecological balance is disturbed” [18].

8. Bangladesh

COVID-19 pandemic is an unprecedented global public health risk affecting acute infectious respiratory disease. For Bangladesh, COVID-19 is a humanitarian crisis with a public health dimension. We need to find other options to mitigate the economic tremor, which will bring the majority of the country into food insecurity in coming days. In cities, especially who are living their lives as daily wagers, may have to skip meals. We need to find solution to keep Bangladeshi people safe in the same time we need to protect their livelihoods. One solution would be absolutely must stay home, for that case, government and NGOs and donor communities can play a key role by providing food or emergency cash transfers. The mobile money providers need to keep their agents active during this pandemic time. With digital cash financial system, money can be transferred into the villages and could deliver money to almost every household.

Bangladesh can learn important lessons from China, South Korea, Italy and other countries, who are deeper into their COVID-19 response than Bangladesh is. Bangladesh should also monitor and evaluate their policies, so that Bangladesh can grasp the relevant part, which can be replicated in Bangladesh policies.

The migrants' workers, who recently lost their jobs, started their journey back home to their villages. However, most have workers planned not to return to Dhaka city for a while. Now the major challenge is the students who are at home and depended on the financial condition of their parents whether they can pursue on line education.

In urban areas, domestic issues in households, especially in the absence of house cleaners has become a worry. Men, girls and boys overburdened with housework. Mental health problems could be a serious issue by taking stress and pressure, such as education, work and daily life. Pandemic has also uncovered the unpreparedness of the health systems globally, not just Bangladesh. Bangladesh need to increase the investment in health infrastructure as well as in hospitals.

The people, who are staying at home can use their smart phone to get connect to the world and can buy groceries, sending money to loved ones and video chatting with friends and family to stay mentally active and positive. Based on COVID-19 surveillance data (like China) online people can know where they should go and where not to go by putting a red, green or yellow message on their phone. The system should use easy way to understand messages (by pictures or by other means) as in Bangladesh many people struggle to understand text messages.

To practice the social distancing norms that most developed countries have relied on to reduce transmission is proving to be culturally completely impossible here. However, in Bangladesh stocking up on 30-day supplies is

not possible for most of the people in Bangladesh, where their income is limited and they can only buy foods for a few days.

COVID-19 is new globally and different in many ways. This country has a home to premiere public health experts and institutions. Bangladesh has one of the world's best networks of community health workers, a rich history of public-private partnerships in emergencies, and communities with incredible levels of resilience. The people of Bangladesh have experienced cyclones disaster, floods, and so much more. Above all, people are resilient with all kind of situation.

9. Fair Access to a COVID-19 Vaccine

Investing in a mechanism that will guarantee all countries have fair and timely access to a COVID -19 vaccine is the only way out of the global pandemic, the chief of the WHO said Dr. TA Ghebreyesus on August 2020. He has written to 194 Member States, urging them to join the COVAX Global Vaccines Facility, a mechanism aimed at guaranteeing fair access for all countries, rich or poor, to effective immunization. Warning against “vaccine nationalism” in the COVID-19 pandemic, the WHO chief has underlined the importance of global solidarity in addressing the crisis. “As new diagnostics, medicines and vaccines come through the pipeline, it is critical that countries don't repeat the same mistakes”, he said, adding, “We need to prevent vaccine nationalism” [19]. Further research needed to fight against COVID-19. Vaccines are developed and are on the way; wearing a mask, maintain personal hygiene and ‘Three Feet Distance’ is the only option up until now.

Furthermore, additional scientific questions about the vaccines remain that should be answered to improve vaccine efficacy, including questions regarding the optimizing of vaccination regimens, booster doses, the correlates of protection, vaccine effectiveness, safety and enhanced surveillance [20]. According to Kniesner et al (2020) imply that policymakers must inform the public that non-fatal infections can be prevented and are as economically grave in the aggregate as eventually fatal infections, because of the enormous records of cases involved [13].

10. Researcher Recommends Supplementation to Boost Immune System

According to Dr. Michael Holick, professor of medicine at Boston University mentioned recently that a sufficient amount of vitamin D can cut the risk of catching coronavirus by 54%. “People have been looking for the magic drug or waiting for the vaccine and not looking for something this simple,” he added. Many people are vitamin D deficient because there are only small amounts in food, Dr. Holick said. “Most vitamin D comes from sun exposure and many are deprived, especially during winter months”. He said supplementation is a safe and effective way to maintain healthy levels of Vitamin D. Consuming

zinc tablets are also widely known globally to prevent COVID-19 [21].

11. Conclusion

Dr. Choudhury's prediction in June 1999 and Oxford Professor's observation in July 2020 and recent WHO findings in Wuhan 2021- all are similar. Twenty years ago, Dr. Choudhury was correct, in view of the fact that he speculated that this might happen, if we do not keep the ecological balance intact. A delicate ecological balance can limit the spread of viruses, but when it is disturbed, action must be taken to prevent the wholesale worldwide spread of viruses to pandemic levels. Hence, it is evident that to eradicate this paradox of pandemic, the ecological balance needs to be restored in the global atmosphere, otherwise humans will suffer more in the future from microbes. Humans' behaviour need to be changed, when it comes to environmental issues. It is an injustice to the nature, in other words, not doing a natural justice to nature. The relationship between humans and nature should be harmless. Do No Harm- not only to humans but also to nature. It cannot be one side harmful. The relationship between humans and nature should be harmless. It appeared that 'human behavioural change' is the 'key' to prevent all domain of infections and viruses and microbes.

The COVID-19 pandemic is changing the balance of power at the global level. Therefore, world is going into a major shift of power relations. However, spread and exchange of scientific information may be possible and it can lead to faster solving problem. A good surveillance system and a good public health system in Bangladesh is going to be absolutely a key and act very fast for prevention of COVID-19. Above all, worldwide vaccination should be number one priority to control and eradicate this pandemic.

List of Abbreviations

CDC: Centers for Disease Control and Prevention
 COVID-19: Coronavirus disease 2019
 icddr,b: International Centre for Diarrhoeal Disease Research, Bangladesh
 IEDCR: Institute of Epidemiology, Disease Control and Research
 SARS: Severe acute respiratory syndrome
 WHO: World Health Organization

Availability of Data and Materials

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Competing Interests

The author declare that they have no competing interests.

Authors' Contributions

Author designed and conducted the literature review, methodology and contributed to the manuscript structure as well as drafting and overall editing of the manuscript. Author read and approved the final manuscript.

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