

Evolution of COVID-19 pandemic and how it is affecting the society at large

History repeats! Novel coronavirus disease 2019 (COVID-19) is yet another pandemic that human civilization has witnessed among many such pandemics since antiquity. Plague of Justinian (541-542 BC), Black Death -Bubonic plague (1347-1351) in the distant past and Spanish Flu (1918-1919) at the dawn of the last century caused enormous human losses. In the wake of World War I in 1918, Spanish Flu (an influenza virus pandemic) took no time to spread in the globe due to massive movements of troops. Sri Lanka, then Ceylon, recorded about 51,000 deaths attributed to Bombay Fever, a colloquial name originated in British India for the same influenza epidemic during this period (Langford and Story, 1992).

Prior to COVID-19, there were threats of potential pandemics within the last 20 years; SARS first detected in China in 2002/03, H1N1 first detected in the Mexico/US in 2009, MERS-CoV first detected in the Middle East in 2012, Ebola first detected in West Africa in 2014 and Zika last detected in Latin America and the Caribbean in 2015/16 (Chakraborty and Maity, 2020). Of these, SARS CoV was the first corona virus to cause severe zoonotic human infection. It spread from Guangdong, China to 26 countries infecting 8000 people with an overall mortality rate of 9%. However, SARS subsided by June 2003 giving an enormous relief to the global community. This epidemic alerted the scientists to study corona viruses in detail, but this knowledge failed to prevent or curtail the pandemic of COVID-19.

The initial studies of survival pattern of coronaviruses on surfaces showed that it retains viability over five days at temperatures between 22-25°C and relative humidity of 40-45%, implying that cool dry climate (that may include properties of room air-conditioning) promote community spread of the virus (Chanet *et al.*, 2011; Sun *et al.*, 2020). Further, a study done during COVID-19 outbreak showed that the SARS-Cov-2 remained viable at 21 - 23°C and a relative humidity of 40%, in aerosols in air over three hours, and for 72 hours on surfaces of plastic and stainless steel. However, the viability of virus on cardboard and copper surfaces was shown to be less than 24 hours and eight hours respectively (van Doremalen *et al.*, 2020). These findings are bound to change with newly emerging evidence. Coronaviruses are enveloped RNA viruses and classified into four subgroups, alpha, beta, gamma and delta. Among them, four are known as human coronaviruses (HCoVs) capable of causing mild upper respiratory tract infections (Fehr and Perlman, 2015).

In December 2019, a novel corona virus was sequenced and identified in laboratories in Wuhan, Hubei Province of China. The virus was called SARS-CoV-2 and WHO

subsequently named the disease as COVID-19 to avoid xenophobic terms like “Wuhan virus or China virus”. The virus is an avid contagion and is highly virulent. The spread of the infection resulted in misery first in Hubei and then in the entire world; as of mid-May 2020 there were more than five million cases and 300,000 deaths. On January 30, 2020, WHO declared COVID-19 as a public health emergency of international concern and later on March 11 as a pandemic when it crossed the boundaries of 110 countries. The month of January saw alone battle in China to contain the virus enforcing strict rules and regulations. Even Dr. Li Wenliang, the first clinician to observe the unusual infection in Wuhan in December 2019 succumbed to the virus. Despite mass media reporting and WHO warnings, most other parts of the world did not prepare themselves to face COVID-19, until it reached their doorstep. In Sri Lanka, because of early preparedness, the first case of COVID-19, a Chinese tourist, was detected on 27th January. This followed a little dismay in public that led to shortages of surgical masks, medicine and stockpiling of food stuff by individuals particularly in major cities. However, with the detection of first local case on March 11, unprecedented chains of events began to unfold in Sri Lanka as in the rest of the world. Meanwhile, China showed flattening of the epidemic curve in mid-March shifting the epicenter to Europe, and then to USA. The politics of trade war between China and the USA exploded with COVID-19 pandemic, exchanging open criticism between the two world powers pushing WHO into a difficult position.

National health arm of any country is the pathfinder of an outbreak of a deadly novel pestilence, the best example of the time and age is COVID-19. Both curative and preventive arms of the health system face challenges in reducing mortality and preventing the spread when knowledge about the disease and the aetiology is at infancy. Against this backdrop, the first clinical description of 41 cases of COVID-19 was published in The Lancet on January 24, 2020 from China by Huang *et al.* (2020) followed by quite a number of successive publications. Epidemiological association with Huanan seafood market, close phylogenetic similarities between SARS-CoV-2 and animal coronavirus isolates from horseshoe bats, pangolins and snakes were discussed. Clinically, old age, co-morbidities such as diabetes, heart diseases and chronic lung diseases, smoking are risk factors of high mortality and high fever, low albumin lymphocytopenia and high C-reactive proteins are poor prognostic factors. Hypoxaemia, pulmonary opacities and cardiovascular collapse are common manifestations of the severe disease.

While the disease is spreading in the west, novel



descriptions on pathophysiology such as thrombotic phenomena and cleavage of haemoglobin reducing the oxygen carrying capacity are hypothesized. Mass screening, using RT-PCR on naso-pharyngeal swabs, find the unexpected scale of positive asymptomatic people, and they are the carriers of the infection and viral shedders promoting community spread. The WHO strongly recommended social distancing by at least one-meter, frequent hand washing with soap and water, use of 70% alcohol rub and wearing face masks outside the residence as preventive measures. Depending on the impact of the local outbreak, economic and social aspiration of people and the states, different countries adopted different levels of drastic measures such as lockdown of cities, restriction of public gatherings and movements, closing down of educational institutions, government departments and industries, and closing the country borders and airports as preventive strategies. As infected workers were returning from Italy and South Korea to Sri Lanka, the government implemented two weeks of quarantine in newly established centers from early March and imposed island-wide curfew from 20th March, together with many restrictions that paralyzed the entire country like a brainstem stroke.

The media gave full coverage of public dismay in badly affected countries including footages of panic buying, stockpiling of toilet rolls!, food products, deserted streets, stranded passengers, families confined to apartments, hospital chorus, and mass burial and cremation of dead bodies. Even in Sri Lanka, it took some time to get a system running to provide people with basic food items, essential medicine and other necessities, under the unprecedented restrictions and fear psychosis of COVID-19 and fear of starvation. The world faced not only public health issues but also a grave socio-economic and political crisis (Chakraborty and Maity, 2020). There are no better words to describe the corona fear than the words of the award-winning Indian writer Arundhati Roy: "Which scientist or doctor is not secretly praying for a miracle? Which priest is not - secretly, at least - submitting to science?"

The global scale of the pandemic and somewhat blindfolded measures, for no other choice, that the countries are compelled to adopt, have already begun to wreak havoc across the global economy. Airlines and international tourist-dependent sectors are laying off workers. Ripple effects of lockdowns are felt across all the sectors. Increasing unemployment numbers in the US are already coming out. The International Labour Organization (ILO), in a study released in April 2020 projects devastating losses of working hours and employment globally. The World Bank in a number of studies released in April 2020 draws attention to massive increase in poverty levels globally. The International Monetary Fund in its latest World Economic Outlook released in April 2020 projects that the world gross domestic product may contract by 3% with the developed world taking the brunt with a possible 6.1% contraction. In a nutshell the global economic impact is likely to be unprecedented. Some countries are injecting huge sums of money into their economies as stimulus packages. The economic recovery, V-shaped, U-shaped or L-shaped, however, depends on how quickly the pandemic

is going to wither away (personal communication with Tilak Abeysinghe, Research Director, Gamani Corea Foundation and visiting professor in Economics, National University of Singapore).

The knowledge on the actual social impact of the pandemic is scarce hitherto. Obviously, social and economic impacts are interwoven. Increasing economic hardships may bring out the worst of the people. Fortunately, at least in the context of Sri Lanka, what is seen so far in media is that the innate goodness of people is pouring out; giving, helping, taking care of each other, including stray animals, can be seen everywhere. Such generousities were conspicuous through the way how Sri Lankans looked after stranded tourists in the island, aftermath of the sudden closure of the national airport. This is part of the Sri Lankan culture thought to be dead because of the incessant coverage in the local media of irritating political rhetoric and bad news. The quarantine centers, the Sri Lankan government set-up and heart-warming comments by those who are leaving the centers on the care they received are perhaps unique to Sri Lanka. There are lessons that rich countries could learn from a poor country like Sri Lanka; poor only economically. Despite the corona fear, it has given us an opportunity to foster social harmony among the diverse communities of the country.

A report of the United Nations Department of Economics and Social Affairs on May 16, 2020 addressed the adverse influence of the pandemic on vulnerable groups in the society that include people living in poverty, older persons, people with disabilities, youth, indigenous people, refugees and migrants. Lack of proper shelter, running water, healthy food, money and care makes them susceptible to the full effects of the pandemic. In Singapore, second wave of the pandemic arose among large segments of transient migrant workers who were living in crowded dormitories. Alcoholics and drug addicts have neither sense about personal health nor concern about the society. That was the reason of Suduwella outbreak in Sri Lanka which ended up in spreading the infection to navy personnel who were involved in contact tracing and quarantining the drug addicts exposed to the virus. Economic hardships and addictions promoted robberies, petty thefts, anti-social behaviors, and disregard for social values. Socialization is an integral part of human society and the backbone of human civilization. Even few weeks of isolation have many psychological effects in individuals and extended family culture. Disputes, domestic violence, sexual abuse, depression, phobia, obsession about ill health, hypochondriasis lead to mental health problems, worst in individual-centered societies than in community-centered societies. People living alone, elderly in particular, are more susceptible. A feeling of gloomy future, xenophobia and stigmatizations are other aspects.

Even though enormous digital and technological advances have taken place across the globe over the last few decades, there has been a gross neglect of communicable diseases as evident by the failure in developing effective anti-viral medications and vaccines. For SARS-CoV-2, no effective antiviral drugs found hitherto, despite claims

of the efficacy of hydroxychloroquine in in-vitro studies. Currently, over hundred laboratories are attempting to develop a vaccine against SARS-CoV-2 and speculate that it may take more than one year to produce an effective vaccine. So, what is the future of the world? Will COVID-19 have a natural demise or will it lose its virulence? As for today's knowledge there are three geno-types, A,B,C, of SARS-CoV-2 identified with varying virulence. In nature, no virus exterminates its host to extinction and face inevitable self-extinction. It is likely that symbiosis will be the result until a way is found for eradication as with smallpox.

COVID-19 has changed the life and livelihood of the world for the time being. The environment is recovering from ill effects of pollutions. Greenhouse gasses are less emitted; the ozone layer is healing, flora is blooming and the wildlife is roaming. Due to social and economic hardships, many governments are relaxing lockdown measures while advising people to practice social distancing and etiquettes to minimize the risk of a second wave of the pandemic. Now it has become a practice to conduct most of the routine communications online; e.g., meetings through online platforms, and much of the teaching-learning activities through online learning management systems, such as zoom, microsoft teams and moodle etc. This practice is essentially a complimentary preventive strategy for COVID-19. It seems people are accepting a new way of life while facing many other natural hurdles such as floods, cyclones and daily survival challenges. Whether the human behaviour changes with the COVID-19 pandemic is a question. As often the case, people may forget the difficult times and lessons learnt and await unprepared for the next pandemic. Nevertheless, in decades to come, new generations will read about COVID-19, and extend their imagination and relate to another historical tragedy that humankind faced.

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