*Selected Articles from*

***Marxist Leninist New Democracy 72***

***July 2021***

**Making a monster of a virus:**

**Politics of the Pandemic**

***Science Study group of the NDMLP***

**Pandemics in History:**

**COVID-19 in perspective**

Panic more than the virus seems the problem with COVID-19. Thus there is need to recognize the pandemic and objectively assess its impact on individuals and society. It is also necessary to understand the socio-political undercurrents that drive the different responses to it.

Harsh methods to control spread of infection have transcended essential safety measures to affect the livelihood of large sections of the people as well as harmed the wellbeing of individuals and communities.

A historical view of pandemics, viral pandemics in particular in current context, and their impact on humanity will help us to locate COVID-19 in due perspective and take a stand on the means adopted to prevent spread of infection and to treat the infected.

While most pandemics that wreaked havoc on humanity were virus driven, the Bubonic Plague was caused by the bacterium Yersinia Pestis. It was spread by fleas feeding on infected rats, and became a pandemic in the 6th, 14th and 19th Centuries. Among deadlier forms of the plague are the Pneumonic and Septicaemic plagues that, respectively, affect lungs and blood. There are no effective vaccines, and plague epidemics were contained mainly by public health measures. Despite effective antibiotics for treatment, the plague remains endemic to some regions, with a low risk of becoming an epidemic.

The first of seven major cholera pandemics reported across the globe was in India in 1817, with the last in Africa early this century. Cholera, caused by bacterial infection, is endemic to several countries of the Third World, and its persistence is attributed to poor water quality, hygiene and sanitation, which correlate strongly with economic backwardness.

Leprosy, identified in 1873, was once considered highly contagious and devastating. It is caused by Mycobacterium Leprae, the first bacterium to be known as a cause of human disease. Its spread was later found to be slow, with complete cure possible using antibiotics. While the epidemic is now said to approach extinction, increased human migration threatens to retain leprosy as a matter of global concern.

Meningitis is a devastating disease caused by bacterial, fungal or viral infection of membranes covering the brain and spinal cord. It is still a major public health challenge, predominated by bacterial meningitis. With several kinds of microorganisms as cause, meningitis refers to a various conditions, of which some are potentially epidemic, transmitted from person to person by droplets of respiratory or throat secretions. Vaccines are available for several but not all forms of meningitis.

Several major epidemics had taken a heavy toll of human life centuries ago but their causes remain uncertain despite fresh archaeological clues. The Mexican epidemic of 16th Century that killed an estimated 45% of the native population was for long considered a haemorrhagic fever like Ebola; but recent DNA evidence points to a salmonella that arrived with the European colonizers. [*https://www.sciencemag.org/news/2018/01/one-history-s-worst-epidemics-may-have-been-caused-common-microbe*]

Malaria, caused by a parasitic plasmodium and propagated by certain species of mosquitos, was once a notorious killer and is still a life threat in Sub-Saharan Africa and parts of South and Southeast Asia. Death rate has come down from over 20 to less than 0.2 per 10,000 persons, except in Sub-Saharan Africa, where it is stagnant at 16 per 10,000 since 2016. As warned by WHO, shortfalls in prevention and cure of malaria owing to diversion of resources to deal with COVID-19, can lead to a surge in malaria deaths that will dwarf COVID-19 deaths in the region.

**Viral epidemics**

The deadly ***Marburg virus***, identified in 1967 among laboratory staff in Germany, caused haemorrhagic fever leading to shock induced organ failure and death. Fatality, estimated at 25%, reached 80% in Angola in 1998-2000 and the Democratic Republic of Congo (DRC) in 2005.

The ***Ebola virus*** epidemic of 1976 in the DRC and Sudan had fatality rates varying from zero to between 50 and 71%, depending on the might of the virus strain. The virus spread by contact with infected body fluids or tissue. The outbreak that started in 2014 in West Africa remains the largest and most complex.

***Rabies*** is among the deadliest of viral diseases. Death is a certainty if not treated soon after biting by a rabid animal. In the developed world, Rabies is rare owing to vaccines introduced in the 1920s, but remains a serious issue in South Asia and parts of Africa.

***HIV***, recognized in the early 1980s, has estimatedly killed 32 million people by 2019, and is reputedly the biggest killer among virus diseases. The annual infection and AIDS related death rates were 1.7 million and 690,000, respectively. Powerful drugs let people live for years with HIV. But it has devastated many low- and middle-income countries that have 95% of new HIV infections. Cynicism of the pharmaceutical companies and imperialist governments severely impeded access of anti-HIV drugs to low income groups until early this century. That attitude still persists.

***Smallpox*** killed about 1 in 3 of those infected, leaving survivors with deep, permanent scars including blindness until the world was smallpox free in 1980. It killed 300 million in the 20th Century. Fatality rates were high for people without prior exposure to the virus. It is estimated that smallpox from Europe killed up to 90% of infected Native Americans.

***Hantavirus*** spreads through droppings of infected deer mice. It received much interest in the US in 1993 as hundreds contracted the Hantavirus Pulmonary Syndrome and over a third died. More recently, in March 2020, a man tested positive and died in China, prompting strict measures amid the still prevalent COVID-19 pandemic.

***Influenza (flu)*** has been the cause of death for up to 500,000 people in every flu season. The spread and/or fatality rates rise when a new strain emerges to become a pandemic.The most deadly, unfairly called the Spanish flu, which began in 1918 affected 40% of the world's population and killed an estimated 50 million.

***Dengue***,first reported in the Philippines and Thailand in the 1950s, is a viral disease infected by a species of mosquitoes. Annually it affects 50 to 100 million people in tropical and subtropical countries with over 40% of the world's population. With fatality rate around 2.5% it is not called a killer epidemic but, if untreated, it can cause haemorrhagic fever leading to fatality rates of up to 20%.

The highly contagious ***Rotavirus*** takes the faecal-oral route through small particles of faeces that are consumed to give rise to intestinal symptoms. Stomach and intestinal inflammation leads to diarrhoea, vomiting, fever, belly pain, and dehydration. It is the commonest cause of diarrhoea in infants and young children. Available medicines ease symptoms but do not cure. Vaccines can protect children from infection, and children in developed countries rarely die of it. The virus, however, is a killer in the Third World. The highly contagious virus spreads rapidly through the faecal-oral path, and could recur even in children who have been vaccinated against it.

The ***SARS-CoV*** (severe acute respiratory syndrome***-***Corona Virus) first emerged (probably from bats via civets to humans) in Guangdong Province in China in 2002. Following outbreak SARS spread to 26 countries, infecting more than 8000 and killing more than 770 over two years. Fatality rate for was estimated at 9.6%. Although SARS has no approved treatment or vaccine thus far, no new cases have been reported since the early 2000s.

***SARS-CoV-2*** is a member of the family of SARS-CoV viruses and causes COVID-19, first identified in December 2019 in Wuhan, Hubei Province, China. Its origins are under investigation. COVID-19 was well contained in Wuhan and nearby cities by extensive quarantine and travel restrictions. But indifference and ignoring of warnings in several countries, even after declaration of COVID-19 as a pandemic, led to large scale global spread. Data for reported infection and fatality are, however, disputed by some. (This will be commented on in an article dedicated to the COVID-19 pandemic.) People older than 70 years or with underlying health conditions are most at risk of severe disease and death.

***MERS*** (Middle East respiratory syndrome) broke out in Saudi Arabia in 2012 and in South Korea in 2015. The MERS virus is of the same virus family as SARS-CoV, with bats suspected of being the origin of disease passing through camels to humans. Estimated fatality rate was between 30 and 40%, making the virus the most lethal coronaviruses transmitted from animals to people, with no approved treatment or vaccine.

***Yellow Fever***, a mosquito transmitted acute viral haemorrhagic disease endemic to tropical Africa and Central and South America, is called so owing to the jaundice it causes in some patients. Recent major epidemics were in Angola (2015), DRC (2016), Uganda (2016), and Nigeria and Brazil (2017). Of patients who develop jaundice nearly half die within 10 days, the overall death rate being 3 to 7.5%. Vaccination can control this avoidable disease. But heavily populated mosquito infested areas are prone to epidemics, especially where the shortage of a highly effective vaccine that offers lifetime protection denies immunity.

***Smallpox*** was a contagious, disfiguring, deadly infectious viral disease caused by inhalation of large airborne droplets of saliva from an infected person. It has been eradicated by vaccination. Fatality rate was around 1% for milder types of the virus and up to 30% for more virulent forms. It killed some 300 million in the 20th Century before eradication in 1977.

***Measles*** spreads by direct contact with airborne infectious droplets from an infected person. Although a safe, cost-effective vaccine has reduced the death rate drastically, more than 140 000, mostly children under five, died of measles in 2018.

***Mumps*** is prevalent in males, and adolescents and adults suffer most. Without vaccination, it normally occurs in childhood (5 to 9 years of age). Countries that used mumps vaccination (usually measles-mumps-rubella or MMR vaccine) were rendered free of mumps. But resurgence, not severe enough to be an epidemic, has been reported in this century.

***Chickenpox*** or ***Varicella***, caused by anairbornevirus, occurs across the world. Incidence of chickenpox and shingles (caused by the dormant virus in persons who have had chickenpox) was around 140 million in 2013. This could be an underestimate as chickenpox is a common low risk disease (death rate about 1 per 60,000 infections) often treated at home without reference to a physician. Immunization has diminished the number of infections in the West. Shingles, caused by reactivation of the virus decades later, can be hazardous as it occurs in the nerves.

***Chikungunya***, a mosquito-transmitted viral disease, is marked by fever and severe joint pain besides other painful symptoms. No vaccine or specific drug exists and treatment is to relieve symptoms. Severe cases and deaths are very rare.

**Concluding remarks**

Eradication of a disease needs a good knowledge of the disease causing pathogen, the hosts enabling its propagation, ability to unambiguously identify the symptoms of the disease, prospects for regional containment and, above all, financial, state and popular support for the effort.

How deadly a virus infection is cannot be judged based on total deaths and death rates, since other factors have played a role in aggravating the impact of an epidemic. The foregoing discussion suggests that COVID-19, despite claimed fatality rates, is not among deadly diseases. It stands out mainly for its ease of spread. Effective response needs close examination of key features such as the form and means of spread of infection and impact on human health.

Several harsh epidemic diseases await elimination either by vaccination or elimination of the carrier of infection. The disease that has been most successfully eliminated is the small pox. Infectious viral diseases take time to eliminate, and vaccines are not instant solutions.

Herd immunisation can attenuate the impact of harsh infectious diseases as confirmed by the negative experience of indigenous Americans, who for lack of prior exposure to like viral diseases fell victim on a colossal scale to smallpox, measles, influenza, bubonic plague, diphtheria, typhus, cholera, scarlet fever, chicken pox, yellow fever, and whooping cough following European settlement. Although infectious diseases have existed in the pre-Columbian Americas, the limited scale of community interactions across the large land mass probably hampered their spread.

Let not the persistent panic about COVID-19 divert our attention from diseases like malaria, HIV, tuberculosis (TB) and chikungunya, which together annually infect more than 250 million people globally, kill more than 2.5 million and remain a continuing challenge. Diseases like polio, lymphatic filariasis, measles, mumps, rubella and leprosy that are said to be close to elimination risk revival for lack of vigilance.

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***“It is time for everyone to come out of this negative trance, this collective hysteria, because famine, poverty, mass unemployment will kill and destroy the lives of many more people than SARS-CoV-2!”***

*Dr Pascal Sacré*

[*https://www.globalresearch.ca/covid-19-rt-pcr-how-to-mislead-all-humanity-using-a-test-to-lock-down-society/5728483*]

***Science Study group of the NDMLP***

**How Deadly is the Virus?**

# Avoidance, Prevention and Cure

# Information on the ferocity of the virus SARS-CoV-2 and the impact of the disease it causes (named COVID-19 by WHO) is poor among the public. The overall and category-wise effects of the virus on the infected are not adequately reported in the news media, and the public is at a loss to know the true gravity of the problem and respond suitably. Vested interests seem to wilfully obstruct open discussion of core issues and developing sensible approaches to avoid, prevent and cure COVID -19.

# Country wise and region wise realtime data are accessible on the Internet [*https://ourworldindata.org/*] for reported daily rates and cumulative totals of infection, successful treatment and fatality, along with derived data. They have been used variously to study the spread of infection and death and compare the situations in countries and regions. Strong doubts have, however, been expressed over methods used for identifying infection and establishment of COVID-19 as the cause of death.

# Sadly, but not unusually, print and social media and government in most countries join hands to blackout deviation from the official narrative on the disease, its spread and control. The news blackout seems worse than that during the campaign of lies against Iraq about weapons of mass destruction, to justify bombing Iraq.

# When WHO declared COVID-19 a pandemic, most governments and mainstream media agreed, and presented a picture that SARS-CoV-2 is a fast spreading deadly virus. It is now said that the virus has mutated to ‘more virulent’ forms that spread more rapidly and may resist proven vaccines. While evidence for the mutants being deadlier is weak, lax attitude of governments facilitated faster spread, and poorly organized medical treatment for the infected led to avoidable deaths. Lack of public discussion helped the impression grow in the public’s mind that COVID-19 is a fast spreading killer disease with no assured cure.

# The global media uncritically endorse harsh government steps including lockdowns and even curfews as measures that save people from a hitherto unknown deadly disease which, if left alone, would destroy humanity.

# We need to separate fact from fiction.

# *Is COVID-19 an altogether new phenomenon?*

# It is not. The virus is of the SARS-CoV family. The first SARS viruses identified in 2002 had an estimated overall fatality rate of 8% (revised as 14‒15% in 2003 by WHO) but exceeding 50% for people over 64 years. As Corona-type of viruses have existed since long, individual communities could have acquired some degree of inherent resistance to COVID-19 by direct and indirect exposure to corona viruses.

Epidemics vary in behaviour. COVID-19 is coronavirus driven like MERS and SARS. It is faster spreading and far more contagious. Its rapid spread through pre-symptomatic, asymptomatic and mildly symptomatic persons has made it harder to contain than MERS and SARS. But it is far less deadly.

Belief that SARS-CoV-2 is a fast spreading deadly virus dominates policy for all but a few governments. Measures to arrest its spread have been mostly harsh with heavy economic and social cost to persons and communities, in both the short and the long term.

There is, nevertheless, justified fear that the state uses the occasion to tighten its grip on society and weaken the will of the people to stand up for their rights and social justice and defy the state if necessary. There is also fear that global pharmaceutical monopolies, with media backing, wield undue influence on state policy.

# *Are reported infection rates trustworthy?*

# Some groups of medical professionals, like the United Health Professionals, have contested the claimed infection and fatality rates. (*https://www.change.org/p/governments-worldwide-international-alert-message-of-health-professionals-to-governments-citizens-of-the-world/w?source\_location=petition\_nav*).

# The late Dr Kary Mullis, Nobel Laureate inventor of the RT-PCR test, had reportedly said in 2013 that “PCR detects a very small segment of the nucleic acid which is part of a virus itself. The specific fragment detected is determined by the somewhat arbitrary choice of DNA primers used, which become the ends of the amplified fragment”. Thus RT-PCR detects genetic sequences of virus particles (not whole viruses) and a positive test need not mean infection by the virus. Health authorities now accept susceptibility of RT-PCR tests to error of up to 10%, which weakens it as a diagnostic tool for treatment. But it is still useful for qualitative comparison even with larger error.

# Serology is used to detect immunoglobulin G (IgG) antibodies specific to SARS-CoV-2 in a sample of cells from the upper respiratory tract to detect viruses. Test results can disagree based on differences in the type of antibody looked for. Good knowledge of the type of antibody to be measured is thus essential to ensure a meaningful test.

# Dr Pascal Sacré, among others, challenged equating a positive test to infection and declaring the number of new COVID-19 cases on that basis. This is important as the media use PCR positives to intimidate the public by assimilating the data to a fresh wave of COVID-19. *[https://counterinformation.wordpress.com/2020/08/07/covid-19-closer-to-the-truth-tests-and-immunity/]*. The credibility and likely abuse of the PCR test are discussed in [*https://walkinverse.com/pcr-test-gold-standard/*](https://walkinverse.com/pcr-test-gold-standard/)*.*

# Sacré rejects that a PCR positive confirms viral contact at some point, and argues that serology cannot measure cross-immunity, non-specific innate immunity and cell specific immunity that are essential to understanding the infection. He considers the attribution of all PCR positives to SARS-CoV-2 specific antibodies as overly simplified. The United States Centers for Disease Control and Prevention (CDC) concurs that a positive PCR result does not rule out bacterial infection or co-infection with other viruses, and that the detected agent may not be the definite cause of disease.

# Estimates of sensitivity of PCR tests vary. It is accepted that PCR positive at best says that one has (or recently had) COVID-19 but none on potential to infect, while a negative PCR only says that one is currently unlikely to be infectious.

# As number of tests per million affects the measured infection rate, confirmed infection rates will rise with testing. But it is likely that all showing symptoms will invariably be tested to confirm disease. Statistical models [*https://ourworldindata.org/covid-models*] have been developed to rectify shortcomings arising from inadequate testing. But modelling itself is subjective and the four statistical models (two now discontinued) showed wide variation in estimates. Thus, this study will use ‘confirmed cases’ data based on PCR testing despite methodological flaws, which no model can eliminate.

# *How reliable are COVID-19 fatality rates?*

# Current COVID-19 death data comprise all deaths following infection by SARS-CoV-2. This has led to two polarised schools, one counting all persons suspected to be infected at time of death as COVID-19 deaths and the other only deaths solely due COVID-19.

# Hospitals in the US have been accused of inflating COVID-19 death data. Even allowing for inflated numbers, the reported death rates are too large and therefore worrying. Another aspect, which concerns the contribution of COVID-19 to any death, is more important.

# Breakdown of the fatality data into categories by age group, pre-existing serious ailments, and personal care is necessary to correctly assess the effect of the pandemic. Data offered to the public often lack in important details.

# Ealy, McEvoy *et al*. [*https://childrenshealthdefense.org/news/if-covid-fatalities-were-90-2-lower-how-would-you-feel-about-schools-reopening/]* say: “Had the CDC used its industry standard, Medical Examiners’ and Coroners’ Handbook on Death Registration and Fetal Death Reporting Revision 2003, as it has for all other causes of death for the last 17 years, the COVID-19 fatality count would be approximately 90.2% lower than it currently is.”

# CDC, on March 21, 2020 introduced specific guidelines regarding Death Certificates and their tabulation in the National Vital Statistics System. [*https://www.cdc.gov/nchs/nvss/covid-19.htm*] including: “In cases where a definite diagnosis of COVID–19 cannot be made, but it is suspected or likely (e.g., the circumstances are compelling within a reasonable degree of certainty), it is acceptable to report COVID–19 on a death certificate as “probable” or “presumed” encourage hospitals to claim COVID-19 to be the cause of death”.

# It is uncertain if countries other than the US adopt such approach. However, given the US lead in reported COVID-19 infection and deaths, it helps to assess correctly the toxicity of the virus.

# The infection and death rates assigned to the virus alone tell very little, and knowing the conditions under which infection led to death is more important in the response to large scale infection and appropriate allocation of resources for treatment.

The massive surge in infection in India since April 2011 says how reckless management and ill preparedness can cause a health crisis. The government is desperate to find beds for thousands of patients thronging the hospitals, amid shortages of clinical oxygen and other essentials to treat persons with serious symptoms. Blaming the large outburst in infection and the upsurge in fatalities on a ‘new’ strain of the virus can deflect attention from a wrong decision that allowed the gathering of 9.1 million pilgrims between January and April 2021 (3.5 million at peak) around the polluted river Ganga in Haridwar.

There is, on the other hand, a school of thought that actual fatality rates are far more than reported rates, and calling for correction of the ‘error’ using excess fatality data (comparing number of deaths in the relevant period with that for a matching period preceding COVID-19 set in.) [*https://www.who.int/data/stories/the-true-death-toll-of-covid-19-estimating-global-excess-mortality*]

# *Who face the worst threat from COVID-19 infection?*

# This matter received scant attention early during the pandemic as stress was on coaxing people into masking noses and mouths, soaping and sanitizing hands, and keeping the mandatory social distance of 2 m in public places. Yet COVID-19 spread wildly. Significantly, in Sweden, with minimal restrictions on people but good advice on safe practices for the infected and the vulnerable, spread rate was not much worse than European average. Death rates were clearly less. By early 2021 COVID-19 was near zero in Sweden, while the US passed Sweden in deaths per million, despite Sweden’s older population.

Ioannidis et al. observe that the median age of death for COVID-19 is similar to or slightly less than life expectancy for the population in the location, and that 42–57% of deaths in Europe were in care homes while many deaths in the US occurred in nursing homes. [*https://www.sciencedirect.com/science/article/pii/S0013935120307854*]. They add that differentiation between dying ‘with’ and dying ‘from’ SARS-CoV-2 is important as a vast majority of COVID-19 patients had comorbidities that could equally (if not more significantly) contribute to a fatal outcome as SARS-CoV-2.

The elderly and people with more than one comorbidity are highly vulnerable. The high death rate in care homes and nursing homes is due to the vulnerability of the residents to age-related susceptibility to comorbidities and poorer immunity compounded by lack of medical facilities. The higher death proportion of middle aged people in South Asia than in Europe and the US may be attributed to poorer age wise physical fitness and thus lower life expectancy.

# *How do COVID-19 fatality rates compare with those for the ‘seasonal flu’?*

# Interpreting COVID-19 data can be subjective. The infection to fatality ratio (IFR) varies widely, depending on how infection rate has been estimated. If infection rate refers only those with symptoms, IFR will be higher than reported. Study of a statistically meaningful sample population to determine the fraction of asymptomatics (symptom-free infected) among the infected will yield more realistic estimates.

Tendency is to use raw data comprising mostly symptomatic cases. A study at Imperial College London in 2020 showed an infection fatality ratio of 1.15% for high-income nations and 0.23% for low-income nations. [*https://www.webmd.com/lung/news/20201030/covid-19-infection-fatality-ratio-is-about-one-point-15-percent*]. WHO estimates seasonal flu fatality at about 0.1%.

Ealy, McEvoy *et al.* argue that 94% of the deaths attributed to COVID-19 had on average 2.6 comorbidities so that the fatality due to COVID-19 would be on par with seasonal flu fatalities.

What matters is the contribution of SARS-CoV-2 infection to death. As the vast majority of COVID-19 victims are elderly, it is unlikely that SARS-CoV-2 infection in itself causes death of healthy young and middle aged individuals. However, serious comorbidities if present will worsen pre-existing conditions and shorten life by some months or even an year. If the effect is to typically shorten life by a few years, then the virus may be called a serious health hazard.

* ***How do COVID-19 fatality rates compare with those for******other epidemic or pandemic diseases?***

It is agreed that IFR for COVID-19 is far less than for SARS and MERS (both coronavirus illnesses with a far less spread rate). Cholera, small pox, AIDS and dengue are deadlier. What is disturbing about the state and media hype driven panic about COVID-19 is that poorer countries with a prevalence of HIV, TB and Malaria divert material and human resources from these problems in order to control the spread of COVID-19, thus leading to higher fatality rates related to them. *[https://www.theglobalfight.org/covid-aids-tb-malaria/].*

The BBC reported: “Across the globe, patients have been [denied cancer care](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7118606/), [kidney dialysis](https://www.newindianexpress.com/cities/delhi/2020/apr/16/dialysis-patient-denied-treatment-dies-2130804.html) and [urgent transplant surgeries](https://www.nbcnews.com/health/health-care/death-sentence-critically-ill-patients-denied-transplants-amid-coronavirus-outbreak-n1163066), with fatal results at times…. And as with all crises, the current pandemic looks set to hit the poorest countries the hardest. Scientists have warned that, in some places, disruption to the control of diseases such as [HIV, tuberculosis and malaria](https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-05-01-COVID19-Report-19.pdf) could lead to losses on the same scale as those caused directly by the virus. Similarly, experts fear that deaths from illnesses such as cholera could [far exceed those from Covid-19 itself](https://www.nytimes.com/2020/05/22/health/coronavirus-polio-measles-immunizations.html).” [*https://www.bbc.com/future/article/20200528-why-most-covid-19-deaths-wont-be-from-the-virus*]

# COVID-19 has been slow to penetrate Africa and, as dengue and Covid-19 can coexist, victims of serious infectious diseases could be identified with only one disorder and not treated for the other.

# *Does COVID-19 have a lasting adverse impact on health?*

# There is little evidence to justify such fear. However, while the early scare that COVID-19 was deadly and could harm health in the long term has gone the fear psychosis that it created endures. Thus many seek protection by vaccination even when they could do without or wait for the pandemic to ease and thus avoid the vaccination rush.

# The spread of infection could have been reduced if governments and the media put more faith in the integrity of the public and informed them correctly about the real risks of COVID-19 and appropriate preventive measures. The hazards faced by the people are the result of bad planning and fear psychosis among the public.

# *Why do infection and fatality vary between countries and across continents?*

Besides country to country variation, there is urban-rural contrast. The virus spreads far more rapidly in crowded environs than in less urbanized areas. Differences are strong between continents. Infection and fatality in Sub-Saharan Africa, except South Africa (and Namibia and Botswana to a less degree) are much less than in Europe and the Americas. A BBC report attributes it to early action, public support, good community health, warm climate and a large young population. [*https://www.bbc.com/news/world-africa-54418613*]

The land area of a country, the time of initiation of infection and geographic distribution are important factors besides control methods. The first wave of infection did not infect more than a fraction of a per cent of the population and control was by restriction of human movement, without educating the public and winning public consent for infection control. Successive waves were stronger, but people were resentful of the restrictions. Also, in countries with large territory the infection could spread over a long period and even show breaks.

East and Southeast Asia seem less prone to infection and death despite high population density. [*https://worldhappiness.report/ed/2021/reasons-for-asia-pacific-success-in-suppressing-covid-19/*]. Pre-existing immunity from exposure to a corona virus helps. Trust in the government and collective spiritsupport preventive measures and care for the infected. There have, however, been recent surges in Vietnam, Malaysia and China’s Taiwan among others owing to lapse of vigilance. But the overall picture is not likely to alter significantly.

North Atlantic countries did not gain from the experience of Asia-Pacific. The US and some European countries seemed to believe that non-pharmaceutical interventions (NPIs) short of locking down the economy cannot control the pandemic. Governments that were loath to close the economy were lax in control measures until too late.

South America fared nearly as badly as Europe and the US. Lock down has not delivered and infection and fatality per million remains high, except in Venezuela with a sound health care system.

Public distrust of government found expression in distaste for NPIs, noncompliance with prevention policies, and resistance to stringent control. Distrust of the state and the media, with reputation for fake news, along with lack of public discussion polarize public opinion to undermine cooperation even in essential control measures.

# Preventive measures with public support, emphasis on treatment of vulnerable sections of the population, and care for the infected with serious symptoms would have kept down infection and minimised deaths. It will be worth asking ourselves how Nicaragua, Venezuela, Cuba and Haiti had far less infection and fatality per million than their respective neighbours as well as the wealthier US and Canada.

* ***How do people protect themselves from infection?***

The assumption that vaccination is the only way to protect humanity from COVID-19 rejects the roles of innate nonspecific immunity that one is born with and accumulated immunity that the body develops by exposure to various virus attacks. Without them every viral attack can lead to an epidemic so that human survival will rely on ceaseless vaccinations and a banquet of pharmaceuticals. A body lacking in immunity against an antigen may be immunized by injecting an antiserum containing antibodies formed in another body to offer immediate but far less enduring protection against the antigen.

**Inner immunity to COVID-19:** The US government agency CDC [*https://www.cdc.gov/flu/symptoms/flu-vs-covid19.htm*] has stated that symptoms wise Covid-19 resembles influenza. But they are caused by different kinds of virus, COVID-19 by coronavirus SARS-CoV-2, and flu by various influenza viruses. Similarity of symptoms makes it hard to tell them apart so that diagnosis requires further testing. It should, however, be noted that the fear campaign about COVID-19 would have been overcome had the public been reassured early that for all practical purposes COVID-19 was like flu.

As SARS-CoV-2 is akin to coronaviruses causing common colds, it is likely that people would have over years developed some immunity to coronaviruses. Cross-immunity between SARS-CoV-1 and cold coronaviruses is now established. Protection by this natural cell-based (not antibody-based) immunity can last 10 years in contrast to less than 3 years for antibody-mediated humeral immunity.

The prospect of such cross-immunity protecting many from SARS-CoV-2 before vaccines arrived deserves thought.Cell-based immunity uses T-lymphocytes (T cells) like CD4+ and CD8+. T cell immune response defends against infection. Cross-immunity between common cold viruses and SARS-CoV-2 can thus act against antigens common to all coronaviruses.

# Dr Pascal Sacré explains that it is possible that, even without noticing, one may have eliminated the virus with the help of one’s innate immunity, cross-immunity to other cold coronaviruses, and/or T-type cellular immunity, without producing antibodies.

# Innate immunity is non-specific and is the automatic first response of the body to an infecting virus. Its defence of healthy people against the virus could circumvent need for specific immunity. This means a low incidence of COVID-19 in healthy individuals.

# Coercive control methods: Standard of living and good health care are important to one’s health. Quality of diet, physical activity and emotional state are more important. Good mental health is vital to cope with illness. Infection control involving emotional pressure, confinement, forced social distancing and prolonged wearing of a mask is emotionally stressful and harms mental health. Ironically such life-saving measures have tragic consequences.

# The effect of stress on immunity is well demonstrated [Segerstrom & Miller, *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1361287/*]. Thus the severity of infection, by COVID-19 in this context, depends much on the state of physical and emotional health of the patient.

# Also, alongside age and stress, the presence of one or several co-morbidities weakens the system and causes a decline in specific acquired immunity, including humeral antibody immunity.

# While innate cellular immunity could overcome SARS-CoV-2 of most people as it is a coronavirus of the cold virus family and T-cell cross-immunity will be effective, immune defence in vulnerable persons as referred to earlier may not respond appropriately. As a result, the old and sickly suffer severe forms of disease while healthy young people and adults stay protected with immunity intact.

# Trusting the masses: People should be well informed of the disease and its impact on categories of people, based on age group and state of health, and of ways to avoid and survive infection. What often happens instead is that the state and the media frighten the public into accepting hastily mass produced vaccines.

# Besides sound scientific information to reassure healthy persons, warnings and advice are necessary regarding vulnerable individuals on precautions to avoid infection, identifying illness if it occurs, and promptly seeking due treatment. Is it to propagate the belief that immunity is possible only by vaccination that most governments and mainstream media, readily equating “positive RT-PCR tests” to “new COVID-19 cases”, do not educate people about the real hazards of infection but coerce them into fear psychosis?

# A study of infection data based on PCR tests and fatality regardless of comorbidities would still suggest that most of the population will survive COVID-19 even without a vaccine. With comorbidity counted, COVID-19 will only be a fraction as deadly as what we have been told.

# What matter are symptoms whose interpretation decides if one can stay home or shall be quarantined to be seen by a doctor if symptoms worsen. It is wise always to take safety measures that avert infection.

**Mutants and vaccines:** The SARS-CoV-2 has reportedly muted into a several more virile variants resistant to available vaccines. Does this mean that a vaccinated person could be infected by a mutant at some stage? If so, it will be absurd to vaccinate the whole populations.

* ***How best can the infection be treated individually and collectively?***

Prevention is the best option if it does not imply undue restrictions on the public. It is wisest to fully inform the public of the proposed measures, explain the reasons and inform them of consequences of failure to implement them. People should be free to collectively arrive at the best course of action by discussion and debate; and where they disagree with a proposed measure they should be encouraged to offer an alternative. Forcibly curtailing human activity to control infection could yield results worse than from the infection.

Such approach will work if the state has a healthy relationship with the citizens who trust the government. For example, in Sweden, preventive measures were implemented voluntarily. Stricter regimes of prevention of infection proved effective in several countries like China, South Korea and Vietnam where people did not question the intentions of the government. In Cuba, Nicaragua and Venezuela, healthy dialogue between the government and people enabled much lower death rates than in neighbouring countries.

Preventive medicine and community medicine are two approaches that would have a positive impact on control of infection and fatality. Faith in the collective wisdom of the people is central to preventive and community medicine. Reliable and scientifically sound information backed by freedom to decide and act collectively is essential to avoiding and surviving any epidemic.

Lock downs cannot offer a lasting solution for a long enduring pandemic. A well informed community acting within reasonable limits of caution can control spread of infection. Even if infection is widespread, risk of death, most for the physically weak with serious comorbidities, is minimised by timely medical treatment.

There is genuine concern that the Covid-19 vaccination drive marks the first time that the entire humanity is obliged to immunise itself with hastily produced vaccines against infection by a virus akin to the common cold virus and causing symptoms rather like a flu.

As the campaign for universal vaccination is part of the business agenda of major pharmaceutical MNCs as well as a political issue, the politics of vaccination is best dealt with separately.

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# *Scince Study group of the NDMLP*

**The Vaccine Business:**

**Creation and Control of a Market**

For the first time in history there is a campaign to vaccinate the entire mankind with hastily produced vaccines to fight a virus whose effect on healthy young and middle aged people is at worst that of flu, despite claims that it is highly infectious and deadly.

Gains of vaccination are hailed without assessment of performance. The issue is not whether vaccination in itself is effective or risk-free, despite harsh side-effects of some (like Astra-Zeneca) that are public knowledge and others (like Pfizer despite 23 deaths in Norway) rather hushed. If the vaccine was risk free, what was Pfizer’s need to demand, unsuccessfully, from some nations to put up collaterals for anticipated lawsuits against it for vaccine injury due to its COVID-19 inoculation? The key issue is: is vaccination the only way and are there alternatives to mass vaccination.

Let us look at the infection and fatality data before we look at the need for and impact of vaccination.

**Measuring infection and fatality**

Uncertainty exists in PCR testing owing to inherent flaws as well as test procedure. While data error can affect comparison of countries and regions, PCR testing remains a fair way to compare infection rates in time and space within a country or even a region.

[Ioannidis](https://pubmed.ncbi.nlm.nih.gov/?term=Ioannidis+JPA&cauthor_id=33716331) [[*https://pubmed.ncbi.nlm.nih.gov/33716331*/](https://pubmed.ncbi.nlm.nih.gov/33716331/)]surveyed 61 studies and eight preliminary national estimates and observed that the inferred infection fatality rates tended to be much lower than estimates made earlier during the pandemic. On the other hand, Katz and Merone [[*https://www.sciencedirect.com/science/article/pii/S1201971220321809#sec0045*](https://www.sciencedirect.com/science/article/pii/S1201971220321809#sec0045)], while agreeing that different places will experience different Infection Fatality Ratios (IFRs) relating to age distribution and perhaps underlying comorbidities in the population, hold that the mean IFR of 0.68 for data gathered mostly from Europe and US, as well as China, Japan and Brazil is an underestimate.There are those who say that rates of infection and death are much higher than reported, and those who insist that infection rates and IFRs are grossly overestimated.

There is doubt if it is proper to attribute all reported COVID-19 deaths solely if not mainly to the virus. But, since infection can contribute even marginally to the death of someone with comorbidity, the virus plays a role, however small. Nevertheless, careful distinction between death by and death with the virus is important in addressing the problem

Important facts escape notice in data offered as raw numbers of infections and fatalities. Despite emergence of various strains that allegedly spread faster and have higher toxicity, the virus has infected barely 2% of the world population between January 2000 and the time of study (20th May 2021). The worst infection rate for countries with population over 10 million is 15.5% in Czechia, followed by a little over 10% for Sweden and US. Infection averages around 5% in Europe and is below 6% in South America, 1% in Asia and 0.3% in Africa. While global infection rate is falling there is risk of a surge in parts of Africa with low infection rates per million, especially if the low rates result from lack of exposure to the virus.

An infection rate of 10.5% in Sweden, with minimal restrictions, suggests that the inbuilt resistance of the human body could either defy infection or help the body adapt fast to the virus. This may partly explain the low rates of infection and fatality per million in East and South Asia.

Patterns of infection and fatality rates vary. Number of infection waves and waveform, and starting conditions, size and duration of each infection wave differ. Multiple waves can occur when population pockets that were earlier unexposed to the virus get infected by re-entry of the virus, often following relaxing of restrictions.

Person to person propagation of the virus implies that infection may last long in countries with large territory and isolated communities. A reason why India’s huge second wave was of short duration could be that the countrywide infection backed by mass participation in the Kumbhmela started simultaneously but for a slight delay in two southern states.

For a new strain of the virus to initiate an infection wave, there should be a sizeable population lacking in immunity. Even the same strain of virus could trigger multiple waves if a restriction weary public lowers vigil and/or a complaisant state removes restraints after successful control of an infection wave. Risking infection to revive the economy caused strong second waves in Cuba, Vietnam and Venezuela, although the surge did not cause a matching rise in fatality. The upsurge in travel within and between countries in the past several decades has made it hard to isolate infection. Thus, without sustained vigilance, prevention by protective means and locking down all or part of a country faces risk of re-infection until the pandemic passes.

We are informed that waves of infection from around June 2020 were by more virulent and deadlier strains of the virus. While the rise in infections suggests greater infectiousness, data for infection to fatality ratio (IFR) do not support a deadlier strain. India’s strong second wave choked hospitals to crisis level. But IFR was 1.1% compared with 1.4% for the earlier wave. Leaving aside IFR exceeding 10% in some European countries during early weeks, IFR for Europe, overall, fell from over 5% to under 2% for waves between October 2020 and May 2021. Infection waves overlapped in Brazil where IFR dipped from 3.2% for the period up to October 2000 to 2.9% from then on until May 2021. Global IFR declined to near 2% from just over 5% for the preceding 12 months. Thus the new strains do not seem to have made much of an impact on IFR.

Infection and fatality depend much on human resistance to infection. A large ageing population, poor general health, shortcomings in public health care and sanitation, and lack of a sense of community aggravate disease and death. It is now acknowledged that mismanaged health care accounted for many of the deaths in nursing homes and homes for the aged in the US and UK.

Those who claim that COVID-19 deaths are under-reported use excess mortality data for the period concerned over the corresponding period in earlier years. But this ignores the possibility that many sickened people could have avoided hospital during the pandemic for fear of infection. Increase in deaths could also have been caused by increased alcohol and drug usage and stress related issues including suicide during lock downs. In poorer countries, loss of income owing to nation-wide lockdown has led to malnutrition and hunger and consequent ill health. Thus the impact of the virus or its strains cannot be glibly explained in terms of toxicity.

**How effective have vaccines been?**

Despite media and government claims of vaccination controlling infection, the rate of infection in countries with minimal vaccination (under 10 single doses per hundred people) began to decline even before vaccination took effect. The Coronavirus Resource Center of Johns Hopkins University [*https://coronavirus.jhu.edu/vaccines/vaccines-faq*] pertinently observed that: “While some protection may be conferred after a single dose of the Pfizer-BioNTech and Modena mRNA vaccines, this protection is far less than after two doses. The second dose acts as a booster, better preparing the immune system to fight infection.”

Two-dose vaccines help only fractionally after the first dose. Israel fully vaccinated 60% of the population (120 doses per hundred) between late December 2020 and late March 2021, during its “Second Wave”. But infection rate passed its peak by the last week of January when about 15% of the population would have completed vaccination, which needs two more weeks to take effect, or after infection rate fell to half the peak value. Thus the benefit of the vaccine seems marginal as 9% of the population had been infected (IFR = 0.76%) compared with 6% infection (IFR =1.13%) for Palestine where infection is near its end, with vaccination at a mere 10 doses per hundred. It seems, however, that Israel is now protected against a potential Third Wave, if it ever occurs.

British vaccination started in the first week of January. By end of January, when 14 per hundred had the first dose, infection rate had tumbled from a peak of over 60 000 per day in the first week of January to well blow half the value. With the first dose having only a small effect and taking two weeks for that, only a few per cent of the population could have been protected. Thus, credit is not due to the vaccine for the fall in infection rate to below a quarter of the peak value in mid-February.

In Hungary, infection rate peaked at around 10 000 per day in the last week of March and fell by half in mid-April, as vaccination rate rose from 5 to 45 per hundred between mid-February and mid-April. Vaccination could have improved the rate of decline by 20% at best, so that infection rate became negligible by late May rather than mid-June.

In the US, infection was on average over 200 000 per day between early December 2020 and mid-January 2021. Vaccination grew from under 10 doses per hundred at start of February to 83 per hundred by 20th May. Infection rate fell steadily from the second week of January to below half the peak value by mid-February with hardly 8 per hundred vaccinated fully, so that the role of vaccination could only be minimal.

In Chile, vaccination began in early February to reach 90 per hundred by 20th May. Infection persisted with moderate fatality. Failure to arrest infection was attributed to the inadequacy of a single dose and to Chile’s premature relaxing of safety measures.

Infection and death rates were low in India, with just 5 doses of vaccine per hundred administered by end of March. But the ‘Second Wave’ began in late March, aided by reckless government policy to allow a religious gathering of millions. Infection surged 15 fold to 400 000 per day in early May. Vaccination reached 13.5 doses per hundred by 20th May, when infection rate was down by a third from its peak. Vaccination rate was too small to explain even a 5% reduction. Accelerated vaccination could at best help to advance the end of the Second Wave by a few days.

As US embargos denied Iran medical support, including vaccines, barely 3 in hundred were vaccinated by 20th May. Infection rate swelled from late March following Iranian New Year (21st March) festivity to reach around 25 000 per day in mid-April but fall by a half by 20th May.

Japan had three waves, each bigger than the preceding one and taking about 4 weeks to decay from peak value to a quarter of it. An even bigger fourth passed its peak by 10th May with barely 6 vaccinated per hundred.

South Africa, the worst hit sub-Saharan state, had two infection waves: with peaks of 13 000 per day in July 2020 and over 20 000 in January 2021. With negligible vaccination, infection rate fell to a quarter of peak value in four weeks for the first wave and in three weeks for the second.

The question here is not about the potential of a vaccine to stop infection but its true role in arresting it. Vaccination started in earnest in February 2021 near the start of the second global wave, overlapping the first that peaked in January. Vaccination picked up slowly (5 first doses per hundred in mid-March to 10 by 10th April and 20 by mid-May). But Israel had crossed the 100 dose threshold in mid-March, followed by UK and US at 40 per 100. In all cases infection had passed its peak by mid-February.

However effective, vaccination thus far has not helped COVID-19 control very much globally: Europe passed its peak by 10th April with just 20 doses per hundred. Vaccination in Asia lagged Europe by over a month. In most countries infection rate is poised to pass peak before 20 doses per hundred are delivered. US, the most vaccinated in the Americas, had its fourth (weak) wave pass peak in mid-April. Brazil, the most infected in Latin America, rushes vaccination amid falling fatality. But the infection and inoculation patterns suggest that infection rate would fall to half the peak value before 25% of the population is fully vaccinated.

IFR values are for Asia 1.3%, Africa 2.6%; Europe 2.2%, North America 2.2%, South America 3%, and Oceania 1.8%. It should be noted that fatalities refer to death with COVID-19 rather than by it. The number of PCR tests per million is small for Asia and South America, with 350 000 tests per million for most countries. Africa has tested even fewer, while many European countries and North America tested well over a million per million. This means that many persons who are asymptomatic or with mild symptoms would not have been tested in the Third World.

**Is vaccination the best option?**

Vaccines arrived too late to arrest infection. Australian veterinary surgeon and Nobel laureate Peter Doherty, anticipating a long delay in arriving at an effective vaccine, said on 20th May 2020: “I think it’s very likely we’ll get to good drugs even quicker than we’ll get to a good vaccine,” [*https://pursuit.unimelb.edu.au/podcasts/lessons-for-a-future-pandemic*]. That expectation failed as pharmaceutical giants rushed to produce vaccines before the pandemic passed. Why WHO and pharmaceutical companies showed minimal interest in cheap and effective drugs is food for thought.

Five types of COVID-19 vaccines had been developed within an year:

• Viral vector vaccines using a modified unrelated safe virus to deliver SARS-CoV-2 genetic material (AstraZeneca; J&J; Sputnik V)

• Messenger ribonucleic acid (mRNA) vaccines inducing cells to make a protein that triggers immune response (Pfizer, Modena)

• Inactivated vaccines using deactivated SARS-CoV-2 virus (SinoPharm; Sinovac; Bharat Biotec)

• Attenuated vaccines using weakened SARS-CoV-2 virus (Codagenix)

• Protein vaccines using COVID-derived proteins to trigger immune response (Novavax; Sanofi/GSK; Cuban vaccines on clinical trials)

Public funding had a major role in the search for COVID-19 vaccines. Over US$ 5.5 billion went into COVID-19 vaccine R&D. Companies not funded directly had state-backed advance purchase orders. It is not surprising that Pfizer is lobbying hard to ward off the vaccine patent waiver at WHO when it expects US$ 26 billion revenue from its COVID-19 vaccine (out of US$ 71 and 73 billion total revenue) for 2021.

Vaccine efficacy varies. With typically 6 month shelf life, a vaccination programme has to be in place prior to purchase. Reliability of supply is an issue: unfortunate events derailed delivery of 60 0000 ‘second doses’ from India to Sri Lanka. Another issue was the very low storage temperatures for Pfizer and Modena. But market forces coaxed Pfizer into declaring adequacy of storage at normal refrigerator temperatures instead of the initial -60 to -80⁰C. Modena followed suit.

Claims of experience and advances in biotechnology were used to dismiss doubts on hasty production of vaccines, bypassing usual security steps. Serious criticism from reputed medical practitioners about the use of a totally new untested technology in mRNA vaccines has been ignored.

Vaccine safety was at the heart of concerns about hasty development of vaccines. Fears proved justified: 113 post-vaccination deaths, 78 in long term care facilities, occurred within a month of vaccination with the two mRNA vaccines. [*https://www.cdc.gov/mmwr/volumes/70/wr/mm7008e3.htm*]. People vaccinated with AstraZeneca suffered rare blood clots, causing its suspension in much of Europe and elsewhere. J&J vaccine too was suspended briefly following reports of post-vaccination deaths.

The number of adverse events may be statistically minimal. But vaccine providers are unwilling even to consider possible risks. It seems that the pharmaceutical industry is determined to have the entire humanity vaccinated even after all infection waves pass.

Medical opinion is divided on the best way to fight the pandemic. Yet, the dominant discourse has somehow side-lined a mechanism that protected humanity for millennia from epidemics. Debates juxtapose vaccination and herd immunity as mutually exclusive, whereas humanity will eventually reach herd immunity, either through a vaccine or by natural infections of the past as well as the future. In all likelihood, it will be a combination of the two as vaccination programmes have reached a significant section of the population in two continents.

**Herd Immunity**

Amid health officials’ scramble for ways to protect the public from COVID-19, there is occasional mention of herd of immunity as a way to contain it with long term benefit.

The notion that societies should passively allow the virus pass unchecked through the population to achieve herd immunity is flawed, as it will kill many of the old and vulnerable in the process. Sadly, the mention of “herd immunity” often conjures up such impression in the public mind.

Herd immunity is a process by which a population, including members whose immune system lacks resistance on its own, is protected from an infectious disease by immunising a sufficiently large part of the community. The infectant cannot spread if many enough can resist it.

* **How does herd immunity work naturally?** On invasion by a virus or bacteria the body creates antibodies to fight off the invader. [See *https://www.webmd.com/lung/what-is-herd-immunity#1*]. The antibodies are retained even after recovery to help fight another infection.
* **How is herd immunity achieved by vaccination?**

A vaccine induces the body to ‘imagine’ infection by a specific virus or bacteria for which it is designed, and produces antibodies to fight infection when it really occurs. For herd immunity by vaccination, the minimum number needing to be vaccinated depends on the infection rate of the virus or bacteria (known by its reproduction number R0, a high R0 meaning fast spread and a need to vaccinate more people).

R0 for COVID-19 is estimated at around 2 to 3, on par with common cold, slightly above seasonal flu and well above SARS and MERS, explaining why these deadlier diseases did not spread like COVID-19. COVID-19 may require vaccinating a half to two thirds of the population. [*https://www.webmd.com/lung/what-is-herd-immunity#]*

Thus, there is little conflict between the two processes which can even join forces. But the natural process offers longer sustained antibodies. But the vaccination lobby encourages a negative view of herd immunity. [“Five reasons why COVID herd immunity is probably impossible” in *https://www.nature.com/articles/d41586-021-00728-2*]

WHO, which in June 2020 held that herd immunity is attainable either by vaccination or as a result of previous infection, changed its position in November 2020 to hold that herd immunity is attained by reaching a threshold of vaccination is reached and not by exposure to the virus (See Chossudovsky in *https://www.globalresearch.ca/*). This stand violates the universally accepted concept of herd immunity to promote vaccination.

Lockdown strategies, by deferring cases into the future, delay herd immunity to risk infection as long as the pandemic lasts. Availability of effective vaccines enables strategies to vaccinate high risk groups with vaccination optional for others who shall report symptoms if any.

**Vaccination: business and politics ride high**

Never before were vaccines mass produced at speed as now, bypassing conventional procedures. Universal vaccination is urged to fight a virus that only hurts a small vulnerable section of the population. Would not a strategy to vaccinate only the vulnerable as for the seasonal flu in cold climates be saner as it will let the virus pass through the rest to acquire long term herd immunity for all?

On occasion, governments bow to economic and social pressure to lower vigilance to unwittingly undermine well managed infection control and let infection surge as in Vietnam, Thailand and Cuba. However, the countries concerned have acted to restore control and retard infection.

Profiteering by Big Pharma in COVID-19 vaccines is no secret. Unseen by the public are willing partners fetching their share as associated earnings and commissions. Cost of testing and vaccination is already a burden on struggling economies. Peddlers of pharmaceuticals, soaps and detergents, sanitizers and protective gear cynically exploit the mood of fear sustained by the media. Meanwhile, plans are afoot to prolong the agony.

Overall, the exaggeration of the virus threat has led to serious global economic dislocation, with Third World facing ruin even without much direct impact of COVID-19, as economies are interlinked and dominant economies are in disarray. The economic crisis will help global creditors to bring governments more under their control to impose harsh austerity measures on the ordinary people.

Third World lock downs have hit hard the livelihood of the poor, and countries face economic decay, mass unemployment, poverty and famine. Hunger and malnutrition will kill many more than COVID-19 will.

The state-and-media induced panic has, even temporarily, dulled the will of people to mobilize for their rights. Oppressive states and the exploiting classes miss no chance to tighten their hold on power. Democracy faces a serious threat aggravated by the side-lining of health and welfare issues concerns about the poisoning of the environment and global warming. Little is heard on the environmental impact of the waste generated by measures to protect against infection and the process of vaccination.

These are matters for the global left and progressive forces to take note and set aside factionalism to unite against the imperialist order.

**Resistance to vaccination**

Opposition to mass vaccination is not always rational. But there are extensive critical studies like the e-book by Chossudovsky using scientific evidence. [*https://www.globalresearch.ca/the-2020-worldwide-corona-crisis-destroying-civil-society-engineered-economic-depression-global-coup-detat-and-the-great-reset/5730652*]. Concerns that underlie even subjective arguments are serious, like fear of a conspiracy led by vested interests, especially the global pharmaceutical giants. There is also fear that capitalism and the state scent opportunity to secure compliance using fear psychosis driven by the impression of a life threatening pandemic.

Doubts raised by deniers of the pandemic and opponents of vaccination are based on experiences such as the following:

* Declaration of a pandemic by WHO seemed premature. China on 31st December 2019 reported to WHO the spread of pneumonia in Wuhan, and on 7th January 2010 identified the virus responsible. Three days later, WHO issued broad interim guidelines for nations to prepare for the virus. On 20th February, with only 1073 cases (counting 621 on the ship Diamond Princess) outside China, WHO warned of a worldwide spread of the virus, and declared a pandemic on 11th March based on 118,000 confirmed cases and over 4200 deaths worldwide, with two-thirds of cases and three-quarters of deaths within China.
* Declarations about vaccines in January and February raised suspicion of prior knowledge of announcing a pandemic. Development of a 2019 nCoV vaccine was announced at Davos, two weeks after the 7th January statement by China and, on 24th February, Moderna Inc. announced that its mRNA vaccine was ready for human testing.
* Days after pandemic was announced, the Centers for Disease Control and Prevention (CDC) changed the methodology for Death Certificates so that the number of “Covid deaths” would be inflated.
* Inflation of COVID-19 fatalities went beyond hospitals. China raised its COVID-19 fatality figure from 3342 to 4,632 on 17th April 2020, seemingly in the face of rigid US refusal to accept its low death rate. Likewise, Peru on 31st May 2021 altered its criteria for COVID-19 deaths to raise its death toll from 69 342 to 180 764, to become the South American country with most COVID-19 fatalities.
* The media and the establishment have exaggerated the dangers of COVID-19 ignoring the stated position of the WHO that COVID-19 symptoms are usually mild with about 80% recovering without need for hospitalising; others could become ill with breathing difficulty.
* Unfair means were used to muffle search for inexpensive medication to treat COVID-19, the most deplorable being a paper published in *the Lancet*, a reputed medical journal, of 22nd May 2020 using fabricated data aimed to decry hydroxychloroquine (HCQ) in favour of a new costly drug, Remdesivir. Though *the Lancet* later revoked the paper, adverse publicity killed work on HCQ. Campaign is now on against Ivermectin, an anti-parasitic drug that may be more effective than HCQ. The issue is not the efficacy or otherwise of any medication but institutional hostility to development of inexpensive medication.
* The on-going suppression of freedom of expression is a most worrying phenomenon. The establishment and the media have branded all protest against vaccination as anti-social to systematically block and blacklist even reputed professionals who fail to toe the “official line”.

**Concluding remarks**

The purpose of the study did not entail delving into details of the debate on vaccination but only to help the search for sensible ways to address the infection in the context of how people perceive it. The main observations may be summed up as follows:

* The SARS-CoV-2 virus and its mutants causing COVID-19 may spread fast but are not a fraction as lethal as people have been made to believe.
* Infection rarely leads to fatality but for the old, ones with serious underlying morbidities or in poor health mostly if treatment is delayed.
* The problem concerns the entire humanity, and solutions need to be evolved that will protect people regardless of ethno-social identity.
* Harsh methods of infection control like lock-down have caused more harm than good, and should be replaced by methods that people arrive at via informed collective study and discussion to minimise emotional and material harm and prevent loss of livelihood of individuals.
* Health benefits of vaccination need to be considered based on a long term view of public health, especially general health care and defence against potentially more hazardous epidemics and taking into account economic and environmental implications.
* If the public had been assured in an informed way that COVID-19 is rather like influenza, it would have helped to evolve people-friendly ways free of fear psychosis to control the epidemic.
* There is lack of transparency about the safety of some vaccines, and there is need to probe the matter further.
* Scientific and socially meaningful debate on vaccination that has thus far been prematurely and unfairly doused in the mass media should be activated free of obstruction by vested interests.
* The extreme response of indefinite worldwide locking down of economies, mass quarantining healthy people, and closing of schools and universities has done much harm in the short and long terms. Such policies should be critically reviewed transparently with public involvement.
* Now that effective vaccines are in place, the possibility of protecting the vulnerable through vaccination if appropriate and allowing choice for the rest offering opportunity for natural herd immunity should be taken up for serious study.

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