

Magical thinking in the time of Covid-19

This is the final article of a two-part series



#Research-Mesearch

I don't remember exactly when I heard about the 2019 version of coronavirus, Covid-19, but I do know it was during my travels in Asia this past January. Covid-19 was still local to China, as far as I knew, but having lived through swine flu (I vaguely remember chickens being slaughtered *en masse* in Bangladesh in response) and Ebola (which infected only 11 people in the United States), I engaged in a bout of magical thinking when I thought we—humanity as a whole, in general, and our world leaders, in particular—would be equally adept at fighting Covid-19. It turns out, this virus is far more insidious than anything we've seen before.

I thought we knew how to live through viral diseases: it primarily requires excellent leadership and cross-country multilateral coordination; re-allocation of resources to produce necessary instruments, including testing kits, vaccines, and cures needed by communities worldwide; and, public buy-in that happens through mass-messaging via government and non-government institutions, and more informally, through social networks, community leaders, and these days, social media influencers. More distant history provided comfort as well. Lessons from how tuberculosis was tackled include the import of community focused interventions such as "search, treat, and prevent" that were orchestrated collaboratively by governments, employers, and unions in the United States. But that too was magical thinking; we don't live in those times anymore. Unions, and relatedly workers, no longer have that kind of power, and after almost 40 years of neoliberalism we have, for the most part, governments so small that they are ineffective in handling anything that requires a unified intervention

addressing the needs of people without prioritising profit maximisation. And those two are inherently mutually exclusive under global capitalism. With privatisation and NGOisation, we are now reliant on those sectors for aid and intervention in crises. That those sectors are hardly equipped to deal with a pandemic has become exceedingly clear. This is perhaps a key reason for the prolonged period of non-response from governments and the institutions that implicitly run the government under neoliberalism.

This is true across the world; after all, there are no libertarians in a pandemic—everyone wants big government.

What we saw when Covid-19 broke out of China and into other parts of Asia, Europe, and then the Americas, is that many heads of government chose to play ostrich, and then martyr; they started getting infected themselves (I'm thinking of Boris Johnson here), all the while sitting on a novel virus that gained momentum, resulting in a rising human cost that is, frankly, unimaginable, particularly at this time of scientific and medical innovation and discovery.

We know that crises make way for the stripping of rights. Under global capitalism, that amounts to deep violence and indignity of people who are made expendable. Across the globe, the expendables are those who are poor and considered minorities, those who already have limited rights, and those who work the most precarious jobs, without whose labour the world would cease to function. Yet, they are the ones who risk their lives to provide essential labour. In the US, more than 22,000 have died from Covid-19; reports suggest this is an underestimation. It surprises no one that emerging data show that most casualties are from historically oppressed groups—Black, low income, immigrants. For example, in Chicago, 70 percent of those who died are Black even when they constitute 29 percent of the population.

In Bangladesh, the number of deaths remained steady at five for weeks, then rose to 13, and then shot to 39. The

disparity between the two nations is a function of underestimating the death count, even though both nations suffer from the same problem of not testing enough. Of the 39 that are known, most are middle-class; oppressed groups in the global South are often seen as faceless masses of people stripped of individuality and individual lives. They don't have access to medical care, and when they die, it is often attributed to poverty related health impairments. Even in death, they don't count. But this time, they might have to be, given the sheer number of fatalities that are

their risk of death would not have been so high. The mantra of personal responsibility is an underlying theme that can hardly be ignored, because that is what becomes the justification for inaction.

Such kinds of neoliberal rhetoric, when implicit, erases the social determinants of health—it is well documented that health disparities are produced by inequitable access to resources including healthcare, income, education, and the physical environment, as well as race, class, gender, disability, and other social

is being used to engineer a change in demographics. It is, after all, low-income neighbourhoods that are worst affected by Covid-19. In these neighbourhoods, people don't have the luxury of "working from home" as social distancing mandates go into effect. This population includes many Bangladeshi immigrants in the United States who work jobs that have now been made essential. They choose between poverty and risking their lives. When they die, it is framed as a choice—because they are arguably aware of the risk they are taking—constrained as that choice is. They are then blamed for their own deaths because they tend to have socially produced underlying diseases such as hypertension and diabetes that increase their risk of being severely affected by Covid-19. Informal tallies indicate that over a hundred Bangladeshi immigrants in New York have already died of Covid-19.

And this is how we know that their lives don't matter: amid the Covid-19 crisis of which New York is the epicentre, New York Governor Cuomo is considering a plan that would cut Medicaid spending, the means-tested public health insurance programme that many workers rely on.

Then there are those who are even more marginalised: prisoners in densely populated jails, homeless people, and immigrants in detention centres. And in the time of coronavirus-inspired paranoia, our minds go to dark places. In particular, I am reminded of the Nixon era "benign neglect policy" or "do nothing approach" as we hear about the cases of Covid-19 in these populations. The humane thing to do would be to let prisoners out, let the migrants in detention centres through to find safety, treat all individuals like citizens, put the legalese aside, and provide them with healthcare.

They have a right to the same kind of healthcare as those who have been elected to represent them.



A body wrapped in plastic is unloaded from a refrigerated truck, handled by medical workers wearing personal protective equipment, at Brooklyn Hospital Center in New York City.

PHOTO: AP/JOHN MINCHILLO

being projected. A leaked memo from the United Nations estimates that two million will die from Covid-19 in Bangladesh.

We are being told that "healthy" people can survive Covid-19, thus responsabilising and shaming those with "underlying conditions" that increase the risk of mortality. Specifically, older adults and people with medical conditions such as diabetes, high blood pressure, and obesity are being told, directly and indirectly, that they are expendable; that had they been taking care of themselves,

identities. But that has never stopped politicians from blaming people for ill health, in the same way that people are blamed for the poverty in which they are forced to live. Such forms of erasure deny people the cause of their suffering; indeed, such erasure is undeniably a form of violence.

When such rhetoric is explicit, like that of Texas Lieutenant Governor Dan Patrick, who said "lots of grandparents" are willing to die to save the economy, it inspires all kinds of worrying questions, including about whether the pandemic

Covid-19: Taming the beast

AHMED A AZAD

THE Covid-19 pandemic, caused by coronavirus SARS-CoV-2, has brought the entire world to its knees and virtually stopped all face-to-face social interactions between humans. Personal freedoms and human rights have been severely curtailed all over the world to help slow down the infection and death rates. This newly discovered coronavirus is extremely contagious, and up to 20 times more deadly than seasonal flu. Currently, the only way to reduce community spread is by maintaining good hygiene, social distance and self-isolation. In Bangladesh, it will be a challenge to implement these public health measures in congested environments, and particularly hard for disadvantaged people and casual workers who would starve if confined at home for long. A substantial portion of the government's stimulation package must be ring-fenced for the poor and needy, otherwise the public health measures will fail.

Effective health and economic policies to counter the adverse effects of the pandemic require extensive testing for the presence of the virus in infected individuals, and people they have been in contact with. PCR- and sequence-based tests require expensive equipment and reagents, are time-consuming, and the total capacity is hardly adequate for testing all infected individuals, contact tracing and determining the infection status of health care workers. There is an urgent need for a quick, inexpensive and less invasive blood tests for detecting anti-viral antibodies and confirming infection. A simple dot-blot blood test that provides results within 15

minutes has reportedly been developed through a joint venture collaboration between Gonoshasthaya Kendra and RNA Biotech Ltd, a company formed by a group of young researchers in Bangladesh.

If the claims for this locally developed test are validated, then the project should be treated and supported as an urgent national priority, so that adequate numbers of kits can be made available for extensive testing at the earliest. The quoted price per test is miniscule in comparison to the gene-based assays currently in use in Bangladesh, and could be much lower if the recombinant antigens (the four structural proteins of the virus) were produced in Bangladesh. The imported recombinant viral antigens, produced in bacteria (*E. coli*), might suffice for virus detection but may not be ideal for further biological and clinical studies.

The above rapid test, using locally-produced recombinant antigens that more closely resemble those in the virus particle, could also be an important research tool for following antibody production and response during different phases of disease progression. If properly designed, the dot-blot assay could help identify virus-neutralising antibody in blood collected from individuals recovered from the infection. If the neutralising antibody could be purified, then its protein sequence could be reverse-engineered into a therapeutic monoclonal antibody for mass production by recombinant DNA technology. The required expertise is present in Bangladesh but the multidisciplinary technologies need to be assembled under one roof as a national core facility, a plea that has

fallen on deaf ears.

It is not enough to just keep the virus at bay by social isolation. The virus-induced paralysis of normal life and enforced shutdown cannot continue *ad infinitum*, and countermeasures need to be contemplated. To tame and conquer the invisible beast, we need to understand its biology and molecular structure to discover its soft underbelly as a target for drug and vaccine development. Coronaviruses of innumerable types are ubiquitous in many non-primate animals. Seven of these have managed to cross over into humans. Four have been around for over a century, and cause about a third of all the seasonal colds. Three that have emerged in recent years (SARS, MERS and Covid-19) cause severe illness in humans, termed Acute Respiratory Distress Syndrome (ARDS), but SARS-CoV-2 (Covid-19 virus) is by far the most deadly and contagious.

So, how did SARS-CoV-2 emerge in humans and why is it so dangerous? The ancestor could be a bat coronavirus (88 percent sequence homology) that cannot produce disease in humans or spread from one human to another. It could have picked up these properties through genetic exchange with another coronavirus in a co-infected intermediate host such as a pangolin (an ant-eating mammal), which is a culinary delicacy and is used in Chinese medicine. It is possible that the Covid-19 virus that had finally evolved into a dangerous pathogen in pangolins passed over into a human in the wet markets of Wuhan. SARS-CoV-2 can enter human cells and spread to other humans through a molecular interplay between the viral spike protein on its surface (that gives all coronaviruses the spectacular

crown-like appearance) and two vital enzymes on the surface of human cells.

The spike protein of the SARS-CoV-2 virus contains two distinct structural units. A receptor-binding domain uses a human enzyme—angiotensin converting enzyme 2 (ACE 2), as a receptor to attach the virus to the human cell surface. A second membrane-binding domain, after specific cleavage by the human enzyme Furin, can interact with and fuse the virus and cell membranes, thus facilitating virus entry into epithelial cells, and then into lung cells. This leads to infection of both the upper and lower respiratory tracts (lungs) causing ARDS, which is characterised by serious breathlessness, breakdown of cell signalling networks (cytokine storm), self-destructive immune response and massive secondary infections, ultimately leading to multiple organ failure, especially in older people with co-morbidities such as heart disease, hypertension, diabetes, kidney disease and immunodeficiencies. Less virulent and less contagious human coronaviruses either do not contain the Furin-cleavage site or possess a partial Furin-cleavage site.

Two therapeutic approaches can be tried to stop SARS-CoV-2 from infecting humans. One is to prevent or disrupt the interaction between ACE 2 and the receptor-binding domain of the viral spike protein. The other is to prevent Furin from cleaving the viral spike protein. While required expertise and facilities in structural biology and rational drug design may not be currently available, scientists in Bangladesh can target the above drug development opportunities by using expertise and resources already

available to them. Molecular and cell biologists should be able to develop very specific bioassays based on the above molecular targets, and these disease-specific bioassays could be used to screen the very large libraries of indigenous medicinal plants, and isolated secondary metabolites, collected by ethnobiologists and medicinal chemists in Bangladesh. Every positive lead compound would be a potential candidate drug against SARS-CoV-2 that could be patented and developed into a new drug if the required technology platform is established as a national core facility, another plea that has gone unheeded over the last fifteen years. Hopefully, the Covid-19 pandemic will open the eyes and ears of our policymakers so that higher education, research and innovation are supported at the required levels, so that we are prepared the next time around.

Besides coronaviruses, a number of viruses have crossed over from wild animals to humans (Influenza, HIV, Ebola, Marburg) in recent years, causing very frightful diseases. Most of them have lived in animal hosts for thousands of years but in recent times, human activities have destroyed the natural habitats of their hosts and brought man and wild animals into close contact. The Covid-19 pandemic is a timely warning to the human race to not destroy the environment and natural habitats of exotic animals in the mad pursuit of profits and development at any cost.

Prof Ahmed Azad PhD, a retired molecular virologist, has been intimately involved in developing several anti-viral drugs and vaccines. After retirement (2006), he has worked with younger colleagues to help build biotechnology research capacity in Bangladesh. Email: aaazad1945@gmail.com

RABINDRANATH TAGORE
(1861-1941)
Bengali poet, writer, musician and painter.

Everything comes to us that belongs to us if we create the capacity to receive it.

CROSSWORD BY THOMAS JOSEPH

ACROSS

1 Singer Josh

7 Troubling sign

11 "Forget it!"

12 Mountain lion

13 Pressured

15 Plains grazers

16 Ignored the limit

18 Fourth-down play

21 Fly high

22 School paper

24 Sit-up targets

25 Small tablet

26 Take to court

27 Lose

29 Butte's kin

30 Bike part

31 Bird home

32 Trouble

34 Where there's nothing new

40 Ump's call

41 Incite

42 Lofty poems

43 Mole hole

DOWN

1 African grazer

2 Guitarist Wood

3 Strange

4 Singer Justin

5 Bitter

6 Brooklyn team

7 "Let me in!"

8 Stein's kin

9 Outback bird

10 Photographer

Goldin

14 Had aspirations

16 Ferber book

17 Out of style

19 Snouts

20 Reliance

21 Frodo's friend

22 Bright beam

23 Hot brew

25 Kitchen gadget

28 Record companies

29 Sky streaker

31 First Indian prime minister

33 Wild guess

34 Sky sighting

35 Silent assent

36 Expected

37 California's Big –

38 GI-entertaining org.

39 Fresh

WRITE FOR US. SEND US YOUR OPINION PIECES TO dsopinion@gmail.com.

YESTERDAY'S ANSWERS

B	O	S	S	A		H	A	T	C	H
A	R	I	E	L		O	M	A	H	A
R	E	C	A	P		B	Y	F	A	R
S	E	A	H	A		S	H	O	O	T
T	I	E	R	S		N	A	O	M	I
S	C	R	E	E		N	E	E	D	E
K	I	N								
I	C	E	U	P		P	E	C	A	N
T	O	R	S	O		I	R	A	T	E
E	N	D	E			A	S	Y	E	T

BEETLE BAILEY

BY MORT WALKER

BABY BLUES

BY KIRKMAN & SCOTT