

The need for SARS-CoV-2 genome sequencing

SHARIF AKHTERUZZAMAN

THE ongoing coronavirus pandemic has suddenly and drastically changed the way we lived in the world, only a few months ago. We have not seen such devastation in recent history since World War II. The virus has already killed more than 170,000 people worldwide and billions are at risk of getting infected. There is no drug yet with convincing scientific evidence that can cure the illness, neither is there any effective vaccine in sight. We really don't know how the crisis is going to end. But we know for sure that the post-pandemic world is never going to be the same as before. Therefore, envisioning a comprehensive strategy to cope with post-pandemic challenges by exploring all scientific means and ways of the 21st century is crucial.

We all know by now that the causative agent of Covid-19 is a novel coronavirus called SARS-CoV-2. Biologically speaking, viruses are not true biological entities and therefore require a host to survive. All viruses carry their genetic information as either DNA or RNA. The SARS-CoV-2 genome is an RNA molecule of about 30,000 bases containing only 15 genes. The human genome, on the other hand, is a double helix DNA—about three billion bases in size and containing about 30,000 genes. RNA is less stable and more prone to mutation than DNA, so RNA viruses generally change and evolve faster. This sometimes allows RNA viruses to jump from one species to another.

Coronavirus did not just pop up very recently. There are hundreds of coronaviruses belonging to a large

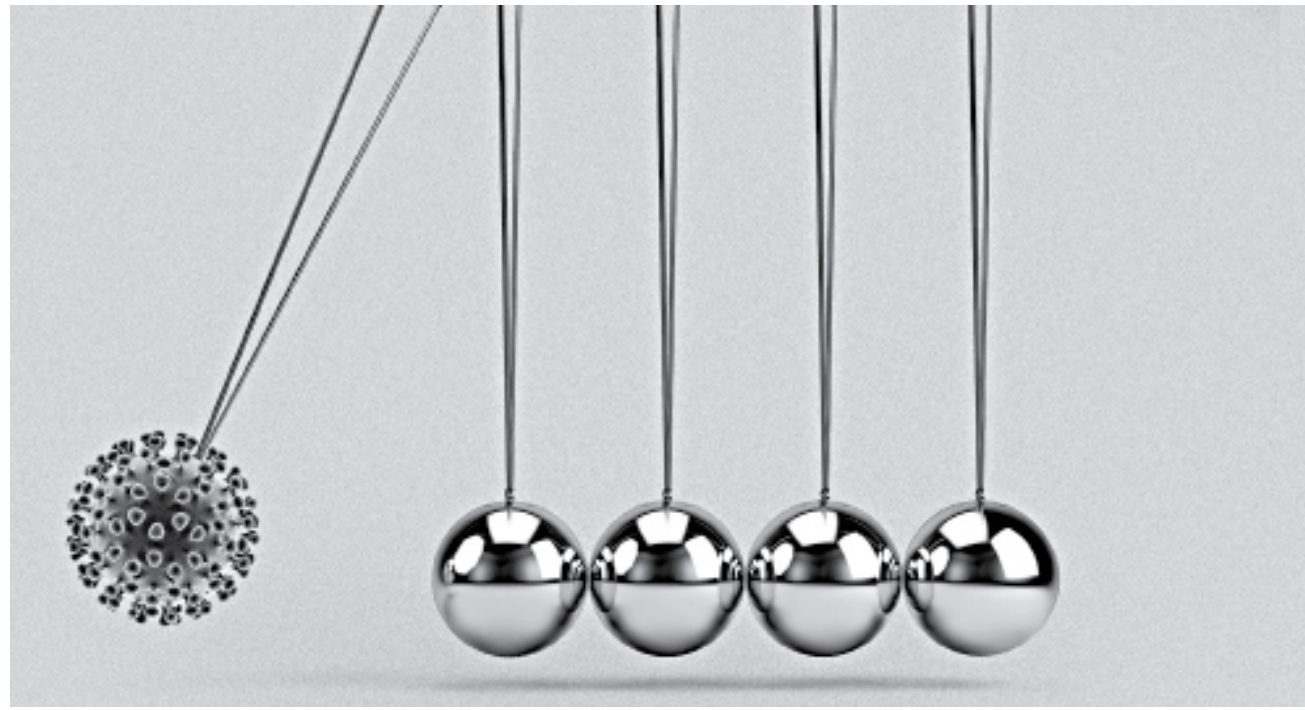


PHOTO: COLLECTED

family of viruses called *coronaviridae*. They have been around us for a long time in many avian and mammal reservoirs including bats, migratory birds, camels, civets, pangolins, mice, dog and cats. The current trail of death and disease around the world is believed to have been created by at least eight strains of the novel coronavirus.

Since novel coronavirus is a new virus, mining its genome sequence is of crucial importance. Genome sequencing has now become a powerful tool for tracking diseases—this is called “genomic prediction”. Whole genome sequencing will help researchers identify genetic changes that occur

in a virus when it spreads through the population. The changes in the genetic sequence of the viral genomes collected from several patients will allow the monitoring of the spread of the disease within the country and between populations over time. It will also provide us with answers to the following questions, which are not known to us at this moment with certainty.

These are—why are some countries suffering more from the virus when compared to other countries? Why do children seem to be less vulnerable than adults? Can the virus evolve into a more virulent strain, and what

will happen then? How fast is the coronavirus mutating? How can a vaccine be developed, targeting a particular population? Where did the virus actually originate?

From the perspective of any specific country, including ours, the most important information from the viral genome sequence at this moment will be—identification of particular viral strain/s that are prevalent, identification of infection hotspots or super-spreaders (individuals who spread the infection to more than the expected number of people), and formulation of strategies for public health intervention. This will also help develop a vaccine targeting

our own population.

Many countries have already started sequencing the viral genomes collected from patients. In India, three institutes (CSRI, CCMB and IGIB) have started working together on the whole genome sequencing of the novel coronavirus. The government of UK has announced a GBP 20 million investment for mapping the Covid-19 spread in UK through whole genome sequencing. The study will be conducted through a consortium comprised of several research organisations and numerous academic institutes. According to the National Centre for Biotechnology Information (NCBI), there are 818 entries of SARS-CoV-2 complete genome sequence from various countries around the world. Countries that have submitted complete genome sequence include USA, China, Spain, Tunisia, Turkey, Iran, South Africa, Taiwan, Thailand, Vietnam, Nepal and Nigeria, with the highest number of submissions from the US.

From our country, we need to take the initiative to sequence the whole genome of the virus samples collected from infected patients in order to understand more about the virus type, its origin, rate of mutation, what type of vaccine would suit our population and most importantly, how we could face the next wave of infection in case of its re-emergence. In Bangladesh, we have several universities and institutes capable of doing genome sequencing with the necessary expertise. What is important is that we act quickly, before it is too late.

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I can't call you

The challenges of getting help from a tele-counsellor

YESHIM IQBAL

THE mental health challenges of the current Covid-19 pandemic are formidable. The media is awash with articles about the effects of isolation and quarantine and how we should keep ourselves mentally robust during this difficult time. Suicides related to Covid-19 are occurring around the world, including in Bangladesh.

In response to this crisis, both physical and mental health services have moved to phone and online-based modalities. These options are well-established as important mechanisms for addressing psychological issues during natural or manmade crises, with the Covid-19 pandemic as no exception. Indeed, for this crisis, the phone makes more sense than ever before, as it allows people to get help while maintaining social distancing. In Bangladesh, options for tele-health and tele-counselling have rapidly increased in the past few weeks. Across the world, crisis helplines of various kinds are reporting surges in the calls and texts they are receiving.

But this might not be the case in Bangladesh, as I illustrate below, and I would encourage mental health service providers (especially those who are now focusing their services into being more phone-based) to consider why.

Kaan Pete Roi (loosely translated from Bengali, it means “My Ears Wait to Listen”) is the first and



ILLUSTRATION: KAZI TAHSIN AGAZ APURBO

only suicide prevention helpline in Bangladesh, and is staffed by trained volunteers. Kaan Pete Roi (KPR) follows the model of Befrienders

Worldwide, a global authority on suicide prevention. This model espouses the use of compassionate, open-minded listening to prevent

suicide, with the majority of this listening taking place over the phone. Since its inception in 2013, KPR has received over 20,000 calls.

As of the middle of March, coinciding exactly with the coronavirus lockdown, Kaan Pete Roi experienced a sharp decrease in calls, by almost 60 percent, and has stayed low in comparison to the standard average call rate of the past several years. To try to understand why this might be, the KPR administration ran a simple, two-option poll from its Facebook page, asking the following question (translated from Bengali): “I'd like to get help from KPR, but I can't. This is because: 1) My circumstances at home don't allow me to talk or 2) I can't add credit to my phone.” As of the time of writing this article, two days after this poll was published, this poll has 187 responses, with 96 for the first option and 92 for the second—essentially, an almost even split between these two options.

I would encourage mental health providers to consider these points while they are providing health-based services (of course, these are not the only factors that will affect the ability to make a call—but they are a good starting point!). First, privacy, or circumstances at home—everyone is stuck inside their houses right now. For the vast majority of families in Bangladesh, this means there is no privacy to make a phone call—much less a sensitive phone call to a mental health hotline,

to discuss their mental health status. Enough space, or the social circumstances to make a private phone call inside the house, is an extreme luxury in Bangladesh.

Second, the ability to add credit to phones. I've heard many cases already of people who would normally recharge their credit by handing their local shopkeeper some cash on the way to work or school. Now that they're not leaving the house, it's much harder to do so. Even if they do leave the house for essential errands, the agents who assist in recharging credit aren't always there, so they have to go further than planned. It's an immediate, clear logistical problem—one that I'm surprised hasn't been directly addressed by mobile companies already.

It is also extremely important to note that these issues will vary based on demographics. Notably, the gender breakdown for the respondents of the above poll differs. Of those who say the circumstances at home are the problem, 56 were male, and 40 female. Of those who say that recharging their phones were a problem, 66 were male and 26 female. Women are more likely to have caretaking and domestic responsibilities inside the house—a greater burden on their time and privacy; indeed, of the 66 female respondents to the above poll, 60 percent report home circumstances as being the issue.

There are several services

providing tele-counselling and tele-health in Bangladesh now. For those of us working in this sector, it's important to keep barriers to reaching services in mind. To address privacy, the solution might be night-time hours of service provision (itself a logistical challenge on the provision end, of course) and chat/text-based options (we all recognise the increased privacy and ease of texting over a phone call). For the credit options, these services will have to be toll-free or as cheap as possible—an appeal to the mobile operators is perhaps in order here.

As health service providers, we will rarely, in our entire lifetimes, collectively experience such a vast and extreme challenge to which we have to respond swiftly and decisively. There is one point I haven't mentioned yet—although calls to Kaan Pete Roi have decreased, actively suicidal calls have increased by 10 percent. People need our help, and they need it now. We have to make sure we can get it to them.

Kaan Pete Roi is an Emotional Support and Suicide Prevention Helpline. Trained volunteers provide emotional support through confidential, compassionate, and open-minded listening. Please call 01779554391-2, 01688709965-6, 01985275286, 01852035634, 01517969150, every day from 3pm-9pm, Thursdays from 3pm-3am.

Yeshim Iqbal, PhD is the founder and director of Kaan Pete Roi.

BGMEA's response to “Magical thinking in the time of Covid-19”

BGMEA brings it to your notice that on April 13, 2020, an objectionable article under the title “Magical thinking in the time of Covid-19” was written by Nadine Shaanta Murshid, maligning the formidable reputation of BGMEA on a national and international level. The article misleadingly claims that BGMEA asked workers to return to work in direct violation of government shutdown protocol. This is nothing but a preposterous lie. The article insinuates that BGMEA has committed gender discrimination in the process. BGMEA never issued any directive asking workers to return to work so the question of withdrawing an imaginary and non-existent directive under the so-called compulsion of civil society does not arise. Accusing BGMEA of neoliberalism is capricious and ill-conceived. Her claim that BGMEA is promoting modern day slavery and the workers are not properly informed about the Covid-19 pandemic is baseless.

In reality, BGMEA not only represents the owners of RMG factories but is also the caretaker for labour health and safety issues. It is this sense of duty towards

workers that prompted BGMEA to write to the Ministry of Labour on March 20, specifically raising concern about workers' safety in running factories amid the Covid-19 pandemic. Consequent to BGMEA's letter, on March 21, a stakeholders' meeting was conducted convened by the State Minister for Labour and Employment Monnujan Sufian in the presence of FBCCI, BEE, BGMEA and BKMEA whereby a joint decision was taken to keep factories open with supreme caution adopting preventive measures. Next day, on March 22, the Minister sat with all labour union representatives representing the total labour force of the RMG sector in an office, deciding to keep factories open. Subsequently, the Prime Minister addressed the nation and issued 31 directives and in directive 29 stated that industry owners with consultation with workers will continue production, ensuring health and safety. The government issued various circulars declaring a “general holiday” and time to time extended the holiday up to April 25, and all these circulars unequivocally stated that export-oriented industries can be kept open if need be. More specific directions

were given by the Department for Inspection of Factories and Establishments (DIFE) on March 27 and April 1, abundantly declaring that factories which have running purchase orders and factories which are making Personal Protective Equipment (PPE) can be kept open.

BGMEA never formally instructed to close any factory simply because BGMEA doesn't have the mandate under law to do so. However, when the workers who left for their homes upon declaration of general holiday on March 26 started to come back around April 4, mostly to collect their wages, BGMEA played a pivotal role, went out of its way and instructed all its members to keep their factories closed and pay wages through a digital system. BGMEA had no part in the confusion created which led to workers going back to their homes and then returning to join work. BGMEA neither endorses neoliberalism nor does it practice worker exploitation and oppression: the damaging assertions made in the said article is devoid of any justification.

Dr Rubana Huq, President, BGMEA.

QUOTABLE Quote



ART WOLFE
(Born 1951) American photographer and conservationist.

It is in the wild places, where the edge of the earth meets the corners of the sky, the human spirit is fed.

CROSSWORD BY THOMAS JOSEPH

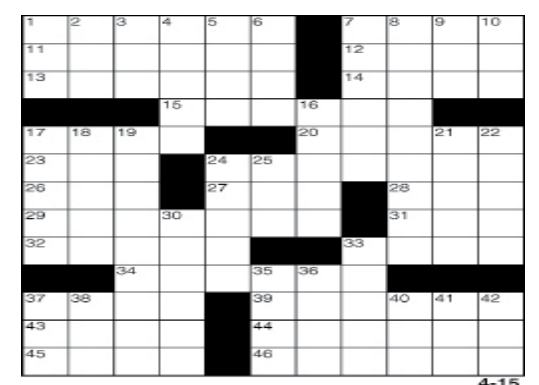
ACROSS

- 1 Dumbstruck
- 7 Unwanted email
- 11 Lively dance
- 12 Longing
- 13 Acts the usher
- 14 Tooth part
- 15 Start a round
- 17 Plays the ponies
- 20 Bank job
- 23 Director
- DuVernay
- 24 Brown in the funnies
- 26 Kinsey topic
- 27 Lobed organ
- 28 Seventh Greek letter
- 29 Blow up
- 31 Mai tai base
- 32 Pigs' digs

DOWN

- 1 Crunch targets
- 2 “The Simpsons” bartender
- 3 Stout relative
- 4 Lemon rind strips
- 5 Lake near Buffalo
- 6 Finished
- 7 Wave rider
- 8 Serial crime investigators
- 9 In the past

- 10 Got together
- 16 Midwest airport
- 17 Grounds
- 18 Calendar entry
- 19 Folks with returns
- 21 Crunch kin
- 22 League members
- 24 Put a stop to
- 25 Bowler, for one
- 30 Latitude
- 33 Rework
- 35 Take in
- 36 Trade show
- 37 That woman
- 38 Brewed beverage
- 40 Bee follower
- 41 Leather hue
- 42 Museum focus



YESTERDAY'S ANSWERS



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