



COVID-19: Pandemic, People and Panacea

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ABSTRACT

The World Health Organization (WHO) declared the COVID-19 as pandemic on March 11 2020. Since then, there is a lot of unfolding of information daily, which is necessary to study to decide the course of action to contain the disease. Even after seven to eight months after the pandemic of COVID-19 struck, most of the details are still unravelling. Yet another news of possible re-infection somewhat shocked the global community and concerns raised over the current strategy. Besides, the misinformation is spreading like wild-fire and adding to the woes of authorities and administration. The testing strategy also needs a relook, as the RT-PCR test missed some positive cases. The mortality rate is also on a downfall, even as cases are increasing rapidly. We are taking the stalk of these factors in this paper and analyse the possible challenges and solutions. Research is still ongoing, and there is a lot to unfold. Scientists have drawn behavioural pattern from previous outbreaks of Severe Acute Respiratory Syndrome (SARS) and Middle Eastern Respiratory Syndrome (MERS) though both of them were much less severe in spread and mortality rate. Beside vaccines is still far from our sight prevention seems to be the only feasible option to avoid the spread. The psychological impact on health professionals and other front-line workers is must study as these are the important arsenals to fight the exponentially growing pandemic. Proper analysis of the trends emerging from the pandemic is necessary. The daily advancements in the field of COVID-19 related departments are necessary to be verified with proper empirical data and pieces of evidence.



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INTRODUCTION

There are an estimated 10 to the power 31 number of virus present on Earth. Fortunately, or unfortunately, only one is wreaking havoc around the globe. COVID-19 or coronavirus disease – 2019 as named by the World Health Organization has grappled the world since the first case emerged from a wet market of Wuhan in Hubei province, People's Republic of China.

From the morphology of the virus which is crown in shape, it is named so as coronavirus. From that day to now, every aspect of human life is affected by the pandemic, which was declared as it is by WHO in mid-march.

Globalizations and inter-connectedness have been a critical factor in spreading the disease and transforming from outbreak to epidemic to pandemic, which is severe than the Spanish flu of 1918 (Pulido *et al.*, 2020). The virus itself undergone a lot of changes in its genomic sequence and after effects consequently changing the symptoms gradually. From cough, cold to fever, diarrhoea etc. researchers are still studying the strain. Although the race for vaccine development has begun naturally, it will take time as it is a multi-level process. Further re-infection cases detected has been closely monitored, so that firm conclusion to draw the future course of action. WHO continually collecting information from various countries which can be analysed to counter it. The problem of INFODEMIC is also a fear factor along with the pandemic, which can be managed with utmost precautionary measures and counter-information strategy (Pulido *et al.*, 2020).

Geography, Climatic conditions also have an impact on the number of cases and types of cases. High-density residential clusters are more exposed than low density and sparsely populated communities—further serological surveys confirming the trend of large population exposure to the disease as mentioned above and production of anti-bodies. For detection, the types of tests also matter as RT-PCR is best known but has some flaws and anti-body test, which needs further confirmation and is used in finding the spread between communities (Guan *et al.*, 2020).

The study on whether or not to print the Cycle threshold value on the patient's report should be done with proper evidence suggesting some correlation between the shedding capacity of viral load and the ct value. The most neglected aspect of the human resource of health care professionals is their psychological status (Patil and Naqvi, 2020). Most are working in stressful situations where they have to give their best, keep themselves protected and cautious of infecting the family members (Shah and Naqvi, 2020).

RE-INFECTION OR RECURRENCES AMONG COVID-19 PATIENTS

In the earlier phase of the COVID-19 pandemic, the fear of persisting the infection or re-infection was detected but later found in the anti-bodies test which suggests that in all cases the deadly strain of the virus was giving the test positively. It was just a matter of time for disappearing the virus strain from the body. RT-PCR (Reverse transcription-polymerase chain reaction) test is the final and ultimate test to confirm any strain.

But recent reports from various countries registering confirmed re-infection cases, some of which unaware and living in a false sense of security only to be caught by random testing by authorities. There are certain similarities and differences reported, although data on the patient with their due consent and condition of anonymity is not enough to derive any conclusion (Gousseff *et al.*, 2020).

One of the first confirmed cases of re-infection of COVID-19 was reported in Hong Kong. One of the infections was detected in March and a recent one in August. This clear put question mark on our efforts to contain the pandemic and the immunity developed in recovered patients. However, the patient was asymptomatic and had no symptoms.

On the other hand, the case from Nevada, USA was showing symptoms such as hypoxia, myalgia, cough and shortness of breath and required oxygen support system. It is premature to categorise the patients, but scientists were expecting such behaviour of virus as was the case with SARS and MERS outbreak.

In India too some cases are reporting supposedly on re-infection. A 27-year-old woman had tested positive for coronavirus nearly 30 days after she was first discharged from the hospital. This is the first confirmed case of COVID-19 re-infection in Bengaluru (Yasmeen, 2020). Recently a doctor from Dehradun in the Himalayan state of Uttarakhand has been tested positive in rapid antigen test though study results of genomic strain are pending. There are lots of possibilities that are being checked. First, there could be a lack of anti-bodies developed in the patient, and viral load is slipped in the lungs, making it difficult to catch in swab test resulting in non-elimination of disease at the first place. Besides, the methods employed by the swab collector staff is not foolproof as it contains lots of improper methods. It is seen that swab collectors sometimes collect the swab from the nasal cavity, sometimes collects from inner parts. It severely influences the results as the viral can vary according to the position of the swab, where it had been taken. The second reason might attribute to the different viral strain from which it was first infected. In the case of Hong Kong patient, the genomic study suggested the new type of viral strain that infected the person. As the history of the virus suggests that they mutate after a specific interval of time.

This topic of re-infection has brought the question mark on the efficacy of the vaccines under development. But science suggests that re-infection is common in coronavirus family and other seasonal viruses. Therefore, incidences of re-infection are

not causing panic among scientific and health sector fraternity. Thankfully the vaccine candidate who is underdevelopment is so designed to counter different strains of viruses. But to counter all the strains of the virus present in the world, there must be a repository where the genome sequencing of every virus is present so that a more effective and comprehensive vaccine can be made. Still, more study is needed as this virus is unfolding and unleashing new factors every day to study.

Though in their case, the protection offered was one and a half to two years. Again COVID-19 re-infection should be differentiated from persistence traces of RNA which is present and detected even after few weeks post-recovery (Roy, 2020).

An additional challenge of misinformation during COVID-19 pandemic

As the whole world is fighting the COVID-19 pandemic, there is another lesser noticed but doing more harm is the challenge of misinformation as the World Health Organization termed it as *INFODEMIC*, which is the combination of information and pandemic. It is the form of information in this post information revolution era where internet connectivity and penetration are expanding its roots deeper, which misguides the people about the pandemic which still lesser-known. From native medicines and herbal alternatives to consuming sanitisers strictly meant for external use, only the misinformation is only aggravating the already worsening conditions.

The mouth publicity of certain medicines, the unprescribed use of drugs can severely hamper the efforts to flatten the curve of COVID-19. Besides, the rumour-mongering on social media which on one click goes viral these days and can make or break the situation should be handled at war footing. COVID-19 containment strategy is already consuming maximum resources available at the disposal of the authorities. The very small is available to deal with other issues so *INFODEMIC* would undoubtedly add to the woes (Srivastava *et al.*, 2020).

Many countries-imposed lockdowns which are almost confining peoples to their homes resulting in massive traffic on social networking sites forwarding the unverified and, in some cases, dangerous claims. So there is a need of a counter-information campaign to aware, educate the masses about the pandemic with authentic and tested information which will help not only people but also authorities to concentrate their focus on the pandemic and most awaited vaccine (Bawiskar *et al.*, 2020).

Besides, the daily news on vaccine development can

misguide the public and the masses as they can think that the phases are complete and vaccine next door so resulting in more unsafe people to people interaction without following the physical distancing guidelines. The hoax about a particular type of cattle driven food can cause COVID-19 to have cascading effects, be it economically, nutritionally or socially (Srivastava *et al.*, 2020). The drastic and sudden change in regular diet due to misinformation on a particular type of food can also create a huge disaster. Already the resources are diverted very much towards the Containment of COVID-19. Therefore any other disease outbreak due to a sudden change in diet will only add to the long list of problems already existing.

Also doubting the health authorities and suspecting them of falsely admitting the patient in a hospital which is going viral is seriously a cause of concern. First of all, it is based upon rumours created by some anti-social elements to create social disharmony. This can cause under-reporting of cases and an increase in the number of cases.

Is an RT-PCR test enough?

Absolute certainty is unattainable no matter what efforts we put in. We try to minimise the errors and try to reach the diagnosis, which is correct. After the pandemic started spreading its tentacles, the main question before authorities, doctors and scientists was how to identify the patients suffering from COVID-19 successfully. The best known till now is RT-PCR test which is being carried out all over the world. But it is seen that in some positive cases, they were not detected by RT-PCR test on which the doctors and scientists rely upon. It primarily uses nasal swabs.

In some cases, the viral load was shifted towards the lungs becoming challenging to detect the virus. Another test widely used is the anti-bodies test which works on blood samples. But it shows weeks after the formation of anti-bodies, and it makes it difficult to draw an immediate conclusion. It is widely used in checking the prevalence of the disease in a particular area. The serological surveys are implying that a large number of people got the virus and they never knew. It was due to a strong immune response generated by the body and the less virulence of the virus after a considerable amount of time has been passed.

False negatives can be a headache as this can generate a false sense of security among the suspected candidate. Recently some researchers at the University of Cambridge developed a point-of-care test which combines the two kinds of the tests mentioned above. The researchers found that only RT-

PCR test was able to find 8-9 out of 10 cases while the point-of-care test was able to confirm 100% of cases that were tested. It is yet to spread out its reach globally—the debate on cycle threshold (Ct) value on whether it creates a difference or not. A cycle threshold value is the value of the number of cycles performed by the test to uncover or magnify the virus. It supposedly suggests that the lower the number of ct value, the higher the person can shed the virus.

On the contrary, the higher number implies low shedding power of the candidate. But serious doubts are raised whether this parameter to be used in strategising the COVID-19 containment strategy. We have to take into account the co-morbidities the person is having. The person having high ct value and co-morbidity cannot live in fool's paradise of not having the disease. Therefore, there must be a proper study to correlate the ct value and shedding capacity of viral load. Till then, there is no need to display ct value on patients report as it can create a false sense of security (Clark *et al.*, 2020).

Mortality rate: then vs now

As of September 2020, there are around 30 million cases around the world. The deaths reported due to COVID-19 is at one million. And there is no sign of peak arrived yet. At this juncture, five months after the virus first struck, the mortality rate is seen widely as a success rate in containing the pandemic (Jachak *et al.*, 2020). Changing epicentre from china to Europe and now Americas, the mortality is on the decline even after a record number of daily cases registering. This is because many countries are easing their lockdown restrictions, and the festive season is around the corners. The low mortality rate is attributed to the weakened virulence of the virus as was seen in past in swine flu outbreak. Initially, cases with severe symptoms were reported more than milder ones. But now milder cases are reporting of which little percentage of cases requires an oxygen support system. Other reasons include late use of repurposed drugs such as Remdesivir, Lopinavir etc. which was not known to be effective initially. The trend of the country having a low mortality rate with universal Bacillus Calmette Guerin (BCG) vaccine immunisation is interesting to see. Especially in South Asia where cases and mortality rate are low despite the extreme density of the population. In India, which is about to become the most populous country in the world having the 1.3 billion people of a total of 7 billion people present on earth shows remarkably low mortality rate of around 1.7 %. Though another reason can be the harshest lockdown as part of non-pharmacological

interventions (NPI's) imposed.

The choice between containment of diseases and reducing the mortality rate is difficult as first involves lots of allied issues of education and non-covid-19 health services. The second purely focuses on the reduction of the mortality rate. That implies whether people contracting the disease is not a problem but curing them is a must. This can be contradictory. The question of choice between lives and livelihood in low-income countries also complicates the situation. Proper information about symptoms and change in the same conveyed by the World Health Organization and other local authorities was beneficial as people were taking precaution and reporting early at the health care centre if any symptom is found. Besides, various serological surveys conducted in various cities with a high prevalence of COVID-19 indicated that around a quarter of the population has anti-bodies in their blood culture (Palem and Palem, 2020).

EMOTIONAL PERSPECTIVE OF FRONT-LINE WARRIORS

"The true warrior fights not because he hates what is in front of him, but because he loves what is behind him."

A perfect saying for what our heroes are doing be it a health care professional, police authorities, and many others who are fighting the unprecedented pandemic of COVID-19 to protect people like ourselves from the deadly virus. Long before mid-march when the World Health Organization declared the COVID-19 disease as pandemic the COVID-19 warriors were already taken their guards up to fight and urging people to co-operate. Even in the lockdown where people were confined in their homes feeling safe and relaxed for a bit, the warriors were on the move to fight the unforeseen situation.

Health care professionals in hospitals, police authorities on the ground even the most neglected professions of ambulance drivers and Asha workers were risking their lives to contain and mitigate the virus spread. They often get less coverage than expected, resulting in apathy towards them in common people. Their role is grossly underestimated by the public, which was felt during the pandemic.

Front-line warriors fighting on two fronts making it more difficult for them to dispense their duties but they promptly overcome this due to extreme willingness to serve the people. At field where doctors, nurses and other health workers and police and field workers frisking the people roaming without valid reasons are incredibly prone to catching the disease.

Also, the constant tension in their mind of “what if my family members catch the virus from me?”. This duopoly takes a huge toll on their minds resulting in stress and anxiety. Plus, the dosage of preventive medicines such as HCQ which generates a lot of heat is another not so good consequence. The shift of the doctor or nurse requires at least 12 hours a day wearing the personal protective equipment (PPE) kit in which you can't even go for dispatching the waste material from the body. Even in these harsh condition, our COVID-19 warriors are fighting with conviction and hopes to eliminate the virus with the same vigour (Dubey *et al.*, 2020; Guo *et al.*, 2020).

The fear of contracting the virus to family members resulting in the estrangement between them and taxing them emotionally. In this challenging scenario, they need at least some mental support and assurance that things are going to be okay. The emotional toll is made much worse when many of these health workers are themselves in isolation, away from their families, in order only to protect them from potential risks.

Meanwhile, some anti-social activities against doctors such as evictions from societies, attacks etc. create more havoc and panic among the warriors. We, as an evolving society, should think about such acts, and these elements should be demonstrated from society.

Finally, every citizen is benefitting from the COVID-19 warriors, whether at home or hospitals, should thank the COVID-19 warriors near them for their eternal service to humanity. This acknowledging and simple gesture will boost up their morale and make them more confident than before.

CONCLUSION

In this stage of the pandemic, the clinical recurrences should be studied with proper empirical data as it has just started to show up. Densely populated regions of the world should plan an effective containment strategy as lockdown in various countries is easing up. Different mortality rate which is widely seen as the success rate in containing the pandemic must be analysed thoroughly so that most vulnerable can be identified and the mortality rate goes down further. The choice between lives and livelihood has to be made locally as according to circumstances. The stressed health workforce should be treated gently, and necessary support be it mental or physical be provided. Sensitisation of masses for the plight of all the health care workers be it a doctor or the paramedic's staff. The debate on cycle threshold (ct) value should be stopped as soon as possible as there no empirical data suggesting the relationship

between the shedding capacity of the person of the viral load and the value of the cycle threshold (ct) value to avoid confusion among the masses. INFO-DEMIC can be treated by counter campaigning with correct and authentic information. As the process of vaccine development is progressing day by day, authorities must be ready with a plan about how to administer the vaccine starting from most vulnerable groups.

Conflict of Interest

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