



Journal homepage: www.cae.sciencearchives.org

(ISSN:2583-1151)



Man-virus relationship: An Opinion

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Covid -19 pandemic is a harsh reality and a great storm that we all witnessed and suffered in one way or the other. The economy across the world crashed, rules of social life and isolation were written and rewritten. The government-imposed lockdowns and restrictions now and then. Infection and deaths were reported like daily commentaries. Doctors were busy trying to figure out the symptoms and creating guidelines for the management of Covid-19. Scientists were busy creating vaccinations. Online was the buzzword and to remain indoors was the new norm. Mental health was not wired to accept the anomalies of life as it was unfolding itself.

2020 will be remembered as the year of the pandemic, which has established a clear connection between health and politics, health and economy, health and home care, health, and social living, health, and education, health, and hospitals, health, and vaccination, the health of those who were infected and those who were healthy, health was a vital ingredient that had ingrained in all walks of life. It was a buzzword of concern.

Now the grim question is: Will this pandemic be remembered as a human tragedy or a catastrophe that can be pole-vaulted into a plethora of opportunities waiting to be explored for the betterment of healthcare? or is the planet geared to doom towards extinction?

Man- virus relationship

The smallest of all microbes (100 times smaller than bacteria), the virus is at the epicenter of global devastation that has claimed over 4 million lives. These biological hitchhikers do not even have a lifeform of their own and can be classified as non-living strings of DNA, incapable of any metabolic process. They simply exist with a protective protein coat but do not have any cells or membrane that makes them incapable of replicating themselves.

However, they come to life and gain momentum when they contact a host, which needs to be a living cell. A perfect example of the most successful parasite that simply hijacks a cell, combines it with the DNA for its survival.

In 1892, the first virus to be discovered was the Tobacco mosaic and since then they have been responsible for various diseases, like flu, smallpox, yellow fever, and polio. Some of the deadliest viruses are:

Ebola – that has killed more than 50% of the people infected.

Marburg – Hailing from the Ebola family, this virus has also claimed 50% of the lives of infected people.

Crimean Congo Haemorrhagic Fever – Transmitted by ticks, this virus to have claimed more than 40% of those infected in Asia, Africa, and the Middle East.

Nipah – first appeared in 1998, transmitted by fruit bats

Coronaviruses – MERS and SARS are two of the popular types of Coronaviruses that kill more than 35% of the patients.

For better or worse, microbes are our lifelong companions. For the development of our immune system, exposure to microbes is a must. More than 3000 viruses have been identified so far and possibly this may be a small fraction of the real total. All these viruses are not our lethal foes, giving us infection but a part of the viral diversity that makes us human and has played a key role in shaping human evolution. In other words, we can say that they have been domesticated over the years.

Some of the retroviruses have been smart enough to make their way into our DNA where they mutate and change but remain trapped inside the genome. The human genome is made up of millions of DNA sequences and this includes a good many viruses that must have been long dead after leaving behind their footprints. Syncing, a human gene that is active only in the placenta, was discovered a decade back, is a nice example of an ancient retrovirus, that became a part of human gene activity by stitching their genetic code into the human genome.

According to scientists, the credit for differentiating humans from chimpanzees goes to the virus. Though we share

identical genes, the viruses must have altered the control switches in the cells. In the evolutionary timeline, viruses have certainly benefited us in various ways. Around 8% of our genetic code comes from viruses.

We share a symbiotic relationship with microbes. Our body carries more bacterial cells than human ones. Initially, it was believed in the ratio of 1:10 (bacteria are far smaller than human cells). Now the scientists believe that we have a roughly equal number of bacteria and human cells. Our gut flora, for instance, is one such wonderful colony of microbes. We just need to know them better, so that we can co-exist. Killing them will be akin to killing ourselves!! Life will simply come to a standstill, in absence of these viruses.

Global concern

The countries of the world have realized that no one is safe until everyone is safe. Each country started looking beyond its boundaries to help each other in the best possible way, by way of medical supplies, doctors, vaccines, and so on. Global guidelines and protocols in travel and healthcare were rewritten keeping human values in mind.

Healthcare infrastructure

The pandemic jolted the entire healthcare infrastructure. It exposed the poor spending and allocation by the government. The government realized that it was time to rethink “health” in terms of spending, improving the hospitals, need for more doctors, nurses, and paramedics were immensely felt. Now that the policymakers have been jolted by the crisis, they are hard at work to see things improve for the better.

Considering a population of 135 crores, we should have at least 7-8% of the GDP being spent on healthcare,

Doctor-Patient relationship

The pandemic has witnessed a paradigm shift in the way a medical consultation takes place. There is a consensus among doctors that telemedicine is the new avatar. Patient in the OPD has now been replaced by video consultation where the doctor and the patient can talk and discuss things to their satisfaction. The patient need not travel for the sake of just a simple consultation. The doctor saves time, by way of serving more patients.

Taking this consultation, a notch further, a general physician or an intern can assist a patient see a senior doctor via teleconsultation where the junior doctor takes over in communication with the peers and simultaneously keeps the patient well informed.

Public awareness

Today we are all aware of the word “immunity” and what preventive healthcare means. Everyone knows the value of zinc and other immunity boosters. Health and lifestyle were very much neglected by the layman who suddenly becomes serious with his evaluation of things. He has attempted to understand the pandemic and learned the basics of life and

living, for instance, social distancing, quarantine, use of masks, healthy living, health check-ups, Covid symptoms, vaccinations, using the oximeter, and so on. Awareness and interest in health have reignited in our routine life.

Technology

A lot of start-ups have come up with innovative solutions, creating apps for monitoring the pandemic, self-evaluation of the symptoms, knowing about the zones affected by the pandemic, creating telemedicine suits for consultations with doctors. Remote monitoring has emerged as the new way of monitoring the patients and their health parameters. A lot of wearable devices have emerged in the market and they constantly monitor us and can raise an alarm or flag the concern to the doctor directly. Furthermore, doctors can get automated updates about their patients and provide real-time medical intervention.

Artificial intelligence and machine learning

This has created an opportunity and widened the scope for data analysis in the public-private healthcare sectors. AI's ability to train itself offers an amazing opportunity to improve and enhance its performance by way of data evaluation and making recommendations based on them

AI in healthcare can help in the processing of crucial patient data to create surgical robots. Deep learning will enable the ability to examine images and find patterns by developing algorithms to help doctors in diagnosing diseases more precisely and much faster. Over time these algorithms will be strengthened enough to boost their accuracy in making the correct diagnosis. Data generated from healthcare platforms will be juggled with AI to create models, discover new treatments plans, and understand the very basis of human disease.

Humanity unfolded itself in a big way

There was chaos, no space left in the hospital, doctors not available, dearth of resources – from medicines to oxygen cylinders, confusing messages about medications surfaced now and then. At this point, people started leveraging social media platforms to help each other by sharing knowledge, experience, medications, cylinders, etc. Humanity had won when the system was simply out of gear.

Battling the virus

Man's relationship with microbes has largely been viewed as a war with weapons like antibiotics, vaccines, and sanitizers. True, it has saved several lives over the past 50 years but we need to rethink our strategy and attitude towards Zoonotic infections that have been on the rise, and the latest to make its mark is COVID-19 or the spikes of SARS-Cov-2.

Vaccination

The year 1796 was a game-changer when Edward Jenner created the world's first vaccine. The initial fight was against

the cowpox virus and since then the vaccine has been a strong defense. Smallpox was officially eradicated in 1979.

Our expectations from Covid-19 vaccinations are similar. Many vaccines have been developed in various countries.

By far, it remains the most effective way of stopping the spread of the Coronavirus-19.

Education and awareness

Public health education is another vital element in the war against the virus. If people are educated, they are more aware and they can initiate ways to protect themselves, their families, and society at large. Hand washing, use of sanitizers, maintaining social distance, use of face masks are crucial elements of awareness that can play a big role in cutting down the virus growth.

Isolation

Living in cities, we are more exposed to a greater number of people in our daily lives. Add to this the length of travel by road, air or public transport. All this adds to greater contact and hence more chances of exposure to the virus get higher. A simple way to cut it down is to minimize our travel and stay confined to one place of safety as far as possible.

Conclusion

Globally, healthcare is worrisome. Each country, each society, each person thinks about his self, this self-centric approach is a true killer. One may be tempted to think that he takes care of his health, and he is safe, ensures a clean house, and may compliment himself. But what about the neighbors and the neighborhood and the animals surrounding them. We

need to be cautious to take care of the entire ecosystem. One weak element can have a cascading effect on others and the entire system can collapse.

We need to realize the planet as one and the best way to combat the virus is through collective alliance, global cooperation in the true spirit of 'Vasudhaiva Kutumbakam'. Even the plants and animals have to be inclusive in our effort to create a healthy self, a healthy society, and a healthy planet.

Global health is facing a real crisis emanating from zoonoses. No less than 1.5 million viral species are part of the wildlife and half of them have the potential to infect us. The answer lies in exploring the socio-environmental scenario and repairing the fault lines. Here lies the real solution.

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How to cite this article:

Akhter, R., Chauhan A., and Jindal T. (2021). Man- virus relationship: An Opinion. *Chemical and Environmental Science Archives*, Vol. 1 (1), 16-18

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