

# A battle between viruses and humans: Who is the winner?

Sanjeev Singh<sup>1</sup>

<sup>1</sup>Guru Gobind Singh Indraprastha University

April 27, 2020

## Abstract

Viruses are considered as one of the primary drivers for human evolution. Humans in return have also offered them an ideal habitat for their growth and evaluation. However, both, humans and viruses are diverse, astute, competitive, and avaricious in nature, which engage them in a never-ending battle. Today, the world goes to win the battle against COVID-19 for sure. However, this never ending merciless battle between viruses and humans looks like an arms race for their survival in which neither a virus wins nor a human but each battle provides them an opportunity to bounce back for the next.

## A battle between viruses and humans: Who is the winner?

Sanjeev Singh<sup>1</sup>, MPH

<sup>1</sup>. **Corresponding author** : University School of Medicine & Paramedical Health Sciences, Guru Gobind Singh Indraprastha University, Delhi, India, Cell : +918447732619, sanjupt@gmail.com

*“We are the descendants of the ‘fortunate ancestors’ who survived past epidemics. But the viruses, too, are the descendants of their own fortunate ancestors that survived and transformed themselves over the past four billion years.” ~ Dr. Ishi Hiroyuki.*

The existence of viruses dates back to four billion years whereas human’s ancestors emerged long after the viruses, around two hundred thousand years ago. Sharing a close relationship with humans, viruses are considered as one of the primary drivers for human evolution. Humans in return have also offered them an ideal habitat for their growth and evaluation. However, both, humans and viruses are diverse, astute, competitive, and avaricious in nature, which engage them in a never-ending conflict resembling that of a friend as well as foe.

As human civilizations flourished, so did viruses. Throughout the history, viruses have played a significant role in reshaping civilizations by claiming uncountable mortalities, morbidities, and economical losses by acting as a natural predator. Several times, these invisible enemies of human race have changed the power dynamics and brought the world to its knees. For example, deaths by the Spanish flu was around 50 million globally, higher than the estimated 16 million in the World War I (WW-I)<sup>1</sup>. During 20<sup>th</sup> century, smallpox was responsible for ~300 million deaths more than that caused as a direct or indirect result of war and armed conflicts (~100 million)<sup>2</sup>. However, humans have developed skills or found ways to coexist alongside viruses or even completely control them. In recent decades, humans have already eradicated smallpox. Poliomyelitis is on its way towards elimination and several other diseases are on the back foot.

But then there is no end as ingenious viruses are continuously evolving and change their nature through mutations and become more virulent. For example, SARS-CoV-2, a new coronavirus strain causing COVID-19 disease, evolved in the space of sixty years. A virus, sized between 70–90 nanometres has locked down the entire world infecting >2.5 million people and claiming >175 thousand lives to date and this numbers are rapidly increasing<sup>3</sup>. This seems to be a battle between two rivals and reminds us of Darwin’s theory of evolution, “survival of fittest.”

Renowned environmentalist and scientist, Dr. Ishi Hiroyuki compares this battle as: *“It’s like the battle between a computer user and a hacker. Human cells try to keep the virus out by barring the way with a password, but the hacker, here the virus, uses every method possible to uncover the password and get inside. The virus mutates at a furious pace to fit perfectly into the keyhole, so human beings are hard pressed to stop the intruder. But humans try to counter this by filling up the keyhole. This is the competition that goes on between the two sides .”*

According to the World Health Organization (WHO), 21<sup>st</sup> century epidemics can spread faster and farther than ever and potentially affecting each and every aspect of a human life<sup>4</sup>. Today, the world goes to win the battle against COVID-19 for sure. However, considering the nature of viruses, it goes without saying that viruses will wait again to strike back and no one knows for sure when and how deadly they will be. This never ending merciless battle between viruses and humans looks like an arms race for their survival in which neither a virus wins nor a human but each battle provides them an opportunity to bounce back for the NEXT.

## References

1. The National Archives and Records Administration, Government of US: The deadly virus – Influenza epidemic of 1918. Available at : <https://www.archives.gov/exhibits/influenza-epidemic/> . Accessed on 22 April 2020.
2. World Health Organization: Bugs, drugs, smoke: Chapter 1 – Smallpox: Eradicating an ancient scourge. Available at [https://www.who.int/about/bugs\\_drugs\\_smoke\\_chapter\\_1\\_smallpox.pdf](https://www.who.int/about/bugs_drugs_smoke_chapter_1_smallpox.pdf). Accessed on 22 April 2020.
3. World Health Organization: Coronavirus disease (COVID-2019) situation reports. Available at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> . Accessed on 24 April 2020.
4. World Health Organization: Managing Epidemics-Key facts about major deadly diseases. Available at <https://www.who.int/emergencies/diseases/managing-epidemics-interactive.pdf> . Accessed on 22 April 2020.