

EU-SAPIENCE: THE WISDOM OF WELLBEING

A Study on The Role of Awareness and Ingenuity as a Tool for Wellbeing

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Abstract: The wisdom of health and wellbeing embedded in proverbs and traditions and carried forth by generations of people has been a constant reminder of healthful living even as people started drifting apart and moving towards cities. The advancement helped us survive, and become specialized in various fields enabling growth and has helped sustain a global human population with great many resources, gadgets and devices that makes our lives comfortable.

The positives of large scale manufacturing to meet human needs of food and shelter and progress in technology has made it possible for advanced healthcare and thereby relatively safer community living conditions.

The great conflicts with predators, challenges against the elements along with epidemics and pandemics however have taken a huge toll and has left a tragic and torturous trail taking a toll on human life and wellbeing.

The biggest catalyst for human progress has been Awareness and Ingenuity and with it came the use of the tools, traditions and technology for progress.

They gave us the edge and the ability and the insight and knowledge to pass it on as traditions which propelled the human progress and advancement in technology.

To think that we are the most informed and technologically advanced creature known is one thing and to realize that we have based our very existence on ingenuity and technology is quite another.

As we stare at a tiny virus which has become an incredibly powerful and deadly threat in the form of the pandemic, we have to garner all the resourcefulness and resolve to overcome this with the least amount of damage to humans.

We now stand at a critical juncture, equipped with the omnipresent technology we have to determine the way forward to stay safe and keep things healthy and well for the future.

Keywords: Wellbeing, Diseases, Epidemic and Pandemic, Wellness, Risk Preparedness Quotient, Traditions, Technology

I. INTRODUCTION

The way the modern urban life has evolved and with 80 percent of the population living in cities and urban areas. The efficacy of the current lifestyle and the relative productivity has to be viewed in the prism of our current existential challenges and the way we have been using technology and the way it can be used. We have to look at the world as our living laboratory where we can see the complete spectrum of existence and also look for ways that is best suited for our existence in the best possible manner. People across the world have moved and we have migratory pattern ascertained and the trails indicate a diverse population with various adaptations passed around in traditional formats and songs and folklore and that has helped keep the traditions and survival methods alive. People have moved from Africa to Asia, Europe and the Americas and Oceania and have found home in the thousands of habitable Islands across the world.

One thing that all of them have in common is that they all have traditions, tools and technology in varying degrees of sophistication to help them cope with the everyday and seasonal challenges and people migrate and wander about looking for greener pastures and better opportunities. And the case with all is the ability to improvise and adapt to the changes and challenges, whosoever didn't manage to do that couldn't survive, the Neanderthals and Denisovans are a hominid species believed to have perished while the Homosapiens continued to thrive and became the most dominant species.

The incredible diversity and adaptability along with the technology and ingenuity has ensured the survival of the humans, if we were to look for the greatest impediment to Life. The most resounding and powerful answer would be, the greatest impediment to Life is Death. But however absolute that may be, we have to look at Life as the holistic process that goes up to death in the natural course of time but cannot be limited or determined by death. Living becomes the benchmark of life. And how we traverse through the various stages and how we manage the various challenges and utilize the various opportunities and dynamic possibilities through our pursuits and purposes is what helps define one's life.

There are however various threats and causes that can become an impediment to Life and early death due to disease is the biggest impediment to life.

The major challenges as evident from fossil records and historical references indicate the top 10 threats to human life and adaptations and coping mechanisms.

1. Predators – Use of Fire to scare them and weapons and hunting parties to kill them
2. Food Poisoning- mental notes and attributing traits to identify and sue them as weapons and for medication
3. Conflict- Forming tribes, seizing and making peaceful allies
4. Diseases- Migration, Fumigation, Medication using herbs and concoctions
5. Infections- Using antiseptic agents and herbs
6. Poisonous creatures- Use of antidotes and herbal concoctions
7. Forest Fires- Harnessing fire and controlled deforestation
8. Hunger- Vegetation, agriculture, Domestication and animal rearing
9. Elements- Use of resources to build shelters and group dwellings.
10. Natural Disasters- Migration and retreating to safer zones.

How we used Tradition, tools and Technology to overcome most of these threats formed the wisdom of wellbeing in the context of surviving in the wild.

According to the Merriam Webster dictionary:

Tradition:

1. A. An inherited, established, or customary pattern of thought, action, or behavior (such as a religious practice or a social custom)
B. A belief or story or a body of beliefs or stories relating to the past that are commonly accepted as historical though not verifiable
2. The handing down of information, beliefs, and customs by word of mouth or by example from one generation to another without written instruction.
3. Cultural continuity in social attitudes, customs, and institutions.
4. Characteristic manner, method, or style.

It is indeed a very important aspect of human behavior and includes habits, hygiene and handling of everyday activities and social interactions all of which define a lifestyle and thus has a definite implication of health and Wellbeing. From the clothes we wear to personal hygiene, everyday habits to food choices and education, training, awareness and general lifestyle, age and existing health conditions and medication that determines how we go about our life and how we live and

handle the challenges and obstacles and manage to stay sane and gain deeper insight and raise the level of understanding and depth of inquiry and existence forms the higher wisdom.

But at the existential level the formation of sophisticated societies, using traditions to keep them together and within the communities considering the common good and by forging tools and technological mindset the major threats were tackled effectively till mankind was left with Disease and Natural Disasters besides Man himself as the biggest threats.

And Disease dominated the landscape and especially communicable diseases in the form of pathogens was and has been the single largest threat. All ancient wisdom and traditions suggest that prevention is better than cure and restraint is rehabilitation. Let's see how humanity has fared against the threat of Disease.

Historically, 10 leading causes of death in 1850 were all infectious diseases, namely.

1. Tuberculosis – Controlled with vaccines but still a considerable threat.
2. Dysentery/diarrhea- Medication available, largely controlled but still exists in under developed countries. Can easily be treated with the right resources.
3. Cholera- Medication available, mostly controlled but still exists in under developed countries. Can easily be treated with the right resources
4. Malaria- One of the biggest challenges and one of the biggest killers still active along with the other vector borne diseases like Dengue and
5. Typhoid Fever- Controlled with vaccines but still a considerable threat in poor and under developed countries
6. Pneumonia- Controlled with vaccines but still a considerable threat in poor and under developed countries
7. Diphtheria- Controlled with vaccines but still a considerable threat in poor and under developed countries
8. Meningitis,
9. Whooping cough- Controlled with vaccines but still a considerable threat in poor and under developed countries. The Disease that left a deep gash and a dangerous and deadly trail.
10. The 1918 Spanish Flu 50-100 million killed more people in a year than the Black Death of the Middle Ages killed in a century. It killed more people in twenty-four weeks than AIDS has killed in twenty-four years.

According to medieval historian Philip Daileader who in 2007 quoted that the trend analysis of the recent research points to a figure around 45–50% of the then European population dying during over a four-year span. Norwegian historian Ole J. Benedictow ("The Black Death: The Greatest Catastrophe Ever").

The Spaniards were blamed for the quick disappearance of the peaceful island Taino, encountered by the Columbus expedition in 1492. Within fifty years the original islanders were virtually extinct. Central Mexico's population fell from nearly 15 million in 1519 to 1.5 million (Noble Cook, 'Born to Die': Disease and New World Conquest, 1492-1650).

Central Mexico's population fell from nearly 15 million in 1519 to 1.5 million a century later, and there was a similar demographic collapse of Andean America. A century after first contact the regions least affected by the disaster lost at least 80 percent of their people, 90 percent or more was more typical,

The Antilles had their smallpox early thanks to Columbus and lost up to 80% of their Indian inhabitants. Smallpox even defeated the fierce Caribs. Santo Domingo's Indians were reduced from one million to five hundred. Moll tells us that in 1577 smallpox killed off one third of the population of Venezuela and in 1590–1610 disease headed by smallpox killed two million Indians in Bolivia, Argentina, Chile and Paraguay. Smallpox killed 90 % of the Indians in Bogota in 1587–9 and the 1720 epidemic in Peru took off another million. In Peru in 1525 Pizarro had found five million Indians still reasonably well organized following the rule of Huayna Capac; by 1821 there were only about 650,000 scattered Indians left. The reason they survived was perhaps because of their scattered and remote habitat far from the infected areas.

On the other hand, the most dreaded wars perhaps since 3600 B.C. it is estimated that there could have been 14,531 wars, large and small, in which approximately 3,640,000,000 to 1,240,000,000 humans killed by war and war related diseases. Primitive warfare is estimated to have accounted for 15.1 % of deaths and claimed 400 million victims would mean a total

of approximately 1,640,000,000 people killed by war (including deaths from famine and disease caused by war) throughout the history and pre-history of mankind.

(Matthew White, 'Primitive War' (Historical Body Count).

Though incredibly and tragically high, this number is actually lesser than the number of deaths caused from infectious diseases in the 20th Century alone. And the number of deaths in this 20th Century should have been much lesser considering that we have better living conditions, Vaccines, Medical / Health Care and highly advanced technology. Yet there have been over 300 million deaths due to Small pox. Over a 100 million people died of Influenza.

II. OBSERVATIONS

The greatest obstacle to human progress is Human Progress not progressing with time. Communicable disease and non-communicable diseases are the biggest health hazards along with epigenetic and environmental factors and lifestyle.

The real and present danger?? What are we up against? Humans V/S Pathogens/Viruses and Microbes.

Humans:

Through a process of Biological selection and evolutionary hacks Humans are the most Dominant and Dramatic species on Planet Earth. Evolved rapidly from a common ancestor we share 98 percent of our DNA with our closest relative the Chimpanzee. Human population is around 7 Billion and have colonized all but one of the seven continents in the world. We are the most technologically advanced species and are wield incomparable influence over our environment.

Size: Female; Avg height 159.5cm and Male; Avg height 171.cm

Weight: 62- 87kg's

Viruses: Viruses are tiny microscopic organisms that exist almost everywhere on planet earth. They can infect animals, plants, fungi, and even bacteria. Viruses consist of genetic material, RNA or DNA, surrounded by a coat of protein, lipid (fat), or glycoprotein, they cannot replicate without a host and are hence classified as parasitic. They are the most abundant biological entity on planet Earth. Before entering a cell, viruses exist in a form known as VIRIONS. During this phase, they are roughly one-hundredth the size of a bacterium and consist of two or three distinct parts:

1. Genetic material, either DNA or RNA
2. A protein coat, or capsid, which protects the genetic information
3. A lipid envelope, sometimes present around the protein coat when the virus is outside of the cell.

Viruses don't contain Ribosomes so they cannot make proteins, which makes them totally dependent on their host and are the only type of microorganisms that cannot reproduce without a host cell. After invading a host cell, a virus will insert its own genetic material into the host and take over that host cell's functions and after infecting the cell, the virus continues to reproduce, and forcing the host cell to produce more viral protein and genetic material instead of the usual cellular products.

It is this process that earns viruses the classification of parasite

Shapes and sizes:

Helical: The tobacco mosaic virus has a helix shape.

1. Icosahedral, near-spherical viruses: Most of the animal viruses including SARS.
2. Envelope: Viruses that cover themselves with a modified section of the cell membrane, creating a thin protective lipid-based envelope. These viruses include the influenza and HIV.
3. Other shapes that can combine both the helical and icosahedral shapes.

Ghostly existence:

Viruses do not leave fossil remains and are difficult to identify, track or trace through time. Molecular techniques are used to identify Viruses.

Regressive or the reduction hypothesis: Which suggests the viruses started out as independent organisms that eventually became parasites which overtime shed their nonfunctional genes and became entirely dependent on the host cells.

Progressive / Escape hypothesis: This theory suggest that Viruses evolved from parts/sections of DNA or RNA that escaped from the various genes of larger organisms and went rogue as they gained the unique ability to become independent and to move between cells of the host.

Virus-first hypothesis: Viruses predate or originated and evolved from the complex molecules of nucleic acid and proteins either before or during the same time as the very first primitive cells that appeared on Earth.

A virus exists only to reproduce. When it reproduces, its offspring spread to new cells and new hosts.

Transmission / Spread:

- Viruses may transmit from person to person, and from mother to child during pregnancy or delivery or through transmission channels.
- Touch
- Bodily Fluids, Saliva, coughing, or sneezing, sexual contact.
- Airborne for short span
- Due to contaminated food or water
- Carrier, infected insects that carry them from one person to another

Some viruses can live on an object or surface for some time, so if a person touches an item with the virus on their hands, the next person can pick up that virus by touching the same object. The object is known as a fomite.

Incubation and Spreading:

As the virus replicates in the cells of a host's body, they start affecting the host. After a specific period of time known as 'the incubation period', the symptoms may actually start to show/manifest.

Mutation:

As the virus spreads, it can gather /pick some of the host's DNA and take it to another cell or organism. Within the host's DNA, viruses can affect the wider genome by moving around a chromosome or to a new chromosome similar to a Trojan Horse virus on a computer. In humans, this may be the way of the development of hemophilia and muscular dystrophy. Seems some viruses, such as the Human Papilloma Virus (HPV), can lead to cancer. Is it a dead end and war zone with Viruses? There are more than 219 species of Virus that are known to be capable of infecting humans. From the discovery of TSV (Tobacco Mosaic Virus in 1892 and the foot-and-mouth disease Virus in 1898, the first "filterable agent" virus to be discovered in humans was the yellow fever virus in 1901. Ever since New species of human virus are identified, at a rate 3-4 each year, and incidentally viruses make up over two-thirds of all new human pathogens.

The silver lining is humans may also carry friendly viruses that help protect against dangerous bacteria, including Escherichia coli (E. coli). The Probiotics and conducive Microbiome helps human health.

The Big Killers: The worst killers identified and compiled by Live science based on the likelihood of a person dying if infected with one of these viruses.

1. Name: Marburg virus

- Type: Similar to Ebola in that both can
- Transmission: Transmitted to people from the wild animals and then spreads to the human population through human to human transmission.
- Effect: It causes hemorrhagic fever (high fevers and internal bleeding throughout the body that can lead to systemic shock, multiple organ failure and death).

- The mortality rate: First recorded outbreak it was 25%, but then turned out more than 80% in the 1998-2000 outbreak in DRC, Democratic Republic of Congo, as well as in the 2005 outbreak in Angola, according to the World Health Organization (WHO).
- Vaccine: No specific treatment or vaccine
- Treatment: Supportive care, Oxygen therapy, IV Fluids.

2. Name: Ebola virus

- Type: 6 viruses of the genus Ebolavirus, namely Zaire V, Bundibugyo V, Sudan V, Tai Forest V, Reston V and Bombali V.
- Transmission: Transmitted to people from the wild animals and then spreads to the human population through human to human transmission.
- Effect: It causes hemorrhagic fever (high fevers and internal bleeding throughout the body that can lead to systemic shock, multiple organ failure and death).
- The mortality rate: 50 to 80% according to the World Health Organization (WHO).
- Fatalities:
- Vaccine: rVSV-ZEBOV
- Treatment: Supportive care, Oxygen therapy, IV Fluids.

3. Name: Rabies

- Type: The disease, caused by lyssavirus, a genus of viruses in the Rhabdoviridae family is one of the most dangerous viruses.
- Transmission: Transmitted to people from the wild animals and then spreads to the human population through human to human transmission.
- Effect: Once the Rabies gets into the nerve cells and gets into the brain it causes overstimulation of nerve receptors – known as excitotoxicity, and killing the brain cells at an alarming rate.
- The mortality rate: 100% if left untreated before the symptoms emerge
- Fatalities: Every year 59,000 people die of Rabies.
- Vaccine: Rabipur,
- Treatment: Treatment has to start before the symptoms appear, only 6 people have survived after the symptoms have appeared.

4. Name: HIV (Human Immunodeficiency Virus, Acquired Immunodeficiency Syndrome)

- Type: The HIV-1 and HIV-2 are two distinct viruses. HIV-1 accounts for 95% of all the infections worldwide while the HIV-2 is estimated to be more than 55% genetically distinct from HIV-1.
- Transmission: Thought to have jumped from Chimpanzees to Humans, it spreads from Human to Humans through body fluids.
- Effect: HIV spreads through certain body fluids that attacks the body's immune system, specifically the T cells. Over time, it destroys so many of these cells that the body cannot fight off infections and disease.
- The mortality rate: HIV is estimated to have killed 32 million people worldwide, while the mortality has fluctuated and reduced in the recent years the highest was 16.3 per 100000 people to the current 3.7 per 100000.
- Vaccine: There are vaccines to control and manage the spread and severity.
- Treatment: Basically, Disease management and one successful and hence promising treatment through stem cells.

5. Name: Smallpox

- Type: Two virus variants, the Variola major and the Variola minor.
- Transmission: Through airborne respiratory droplets, saliva, skin-to-skin contact, blood products, touching a contaminated surface.
- Effect: The Variola virus replicates in the cytoplasm of the host cell. The DNA replication and transcription starts immediately as the virus itself contains enzymes for replication and transcription – and does not relying on the host cell enzymes to initiate the replication.
- The mortality rate: Of the two forms, the Variola minor with a mortality rate of approximately 1% and the more common Variola major with a mortality rate of 30%. Between 65–80% of survivors are marked with deep pitted scars (pockmarks), most prominent on the face. Has killed more than 300 million people in the 20th Century alone.
- Vaccine: Immunity or partial immunity after a smallpox vaccine may last up to 10 years, and 20 years with revaccination.
- Treatment: Isolation, Supportive Care and vaccination.

6. Name: Hantavirus (HPS)

- Type: The Hantaviruses, are members of the order Bunyavirales, family Hantaviridae causing hantavirus pulmonary syndrome (HPS) and Hemorrhagic Fever with Renal Syndrome.
- Transmission: Exposure to the excreta and saliva of infected rodents.
- Effect: The virus affects the lungs, causing rapid accumulation of fluids and leading to Non-Cardiogenic Pulmonary Edema, Pleural Effusion, and Acute Respiratory Distress Syndrome (ARDS).
- The mortality rate: The mortality rate is 35%. Of which 61% are male and 39% Female, with a mean age of 37 years. Globally more than 16,000 people have died.
- Vaccine: No Vaccines yet.
- Treatment: Supportive care, Oxygen therapy, IV Fluids.

7. Name: Influenza

- Type: Influenza viruses are classified into A, B, C and D of these, the A and B viruses cause seasonal flu every year. Only the Influenza A viruses are known to cause the flu pandemics. The A viruses are classified by subtypes based on the properties of their hemagglutinin (H) and neuraminidase (N) surface proteins. There are 18 different HA subtypes and 11 different NA subtypes. Subtypes are named by combining the H and N numbers. It is supposed that there are potentially 198 different influenzas A subtype combination, only 131 subtypes have been detected in nature. They also have clades and subclades.
- Transmission: Human to Human and sometimes Animal to Human.
- Effect: The Influenza Virus is a respiratory virus that affects the throat, nose, bronchi and, sometimes, the lungs. Over the years' different types of influenza viruses have been identified and they evolve and change over time. The effects can range from Mild to Fatal depending on various factors.
- The mortality rate: “The 1918-20 Great Pandemic,” is estimated to have infected 20 to 40 percent of the worldwide population and an estimated 50 to 100 million are thought to have died during the outbreak.
- Vaccine: Yearly Flu Shot/Vaccination.
- Treatment: Supportive care, Oxygen therapy, IV Fluids. And Oseltamivir (Tamiflu), Zanamivir (Relenza), Peramivir (Rapivab) or Baloxavir (Xofluza).

8. Name: Dengue

- Type: The Flaviviridae family and are four serotypes of the virus cause dengue (DENV-1, DENV-2, DENV-3 and DENV-4). It is a mosquito-borne viral infection and the virus that causes dengue is called dengue virus (DENV). There are four DENV Serotypes, so it is possible to be infected four times.

- Transmission: The female Aedes aegypti Mosquito to Human, Human to Mosquito is possible from those infected who are viremic with DENV.
- Effect: and the various climate change factors and the habitat has caused a spurt in the global incidence of dengue. Currently half of the world's population is at risk and there are an estimated 100-400 million infections each year. Dengue's flu-like symptoms that affects infants, young children and adults, but seldom causes death. However Severe dengue is potentially a fatal due to these complication, plasma leaking, fluid accumulation, respiratory distress, severe bleeding, or organ impairment in severe cases.
- The mortality rate: The mortality rate is 35%. Of which 61% are male and 39% Female, with a mean age of 37 years. Globally more than 16,000 people have died.
- Vaccine: Dengvaxia (CYD-TDV) developed by Sanofi Pasteur.
- Treatment: Supportive care, Oxygen therapy, IV Fluids.

9. Name: Coronaviruses and Acute Respiratory Syndromes (COVID-19, SARS-COV AND MERS)

- Type: Coronaviruses are enveloped RNA viruses that cause respiratory illnesses of varying severity from the common cold to fatal pneumonia. Only 7 coronaviruses are known to cause disease in humans.
- SARS-CoV2: A novel coronavirus first identified as the cause of coronavirus disease 2019 (COVID-19) that began in Wuhan, China in late 2019 and has spread worldwide and is a Pandemic now.
- MERS-CoV: Was identified in 2012 as the cause of Middle East respiratory syndrome (MERS).
- SARS-CoV: First identified in 2002 as the cause of an outbreak of severe acute respiratory syndrome (SARS).
- Transmission: Animal to Human, and Human to Human and possibly Human to Animal.
- SARS-CoV2: The spread occurs through contact with infected secretions, respiratory droplets, and surfaces contaminated with respiratory droplets.
- Transmission of MERS-CoV: MERS-CoV may be transmitted from person to person via direct contact, respiratory droplets (particles > 5 micrometers), or aerosols (particles < 5 micrometers). transmission has been established by the development of infection in people who were in close contact with infected individuals.
- SARS-CoV is transmitted by close contact. It is thought to be transmitted by respiratory droplets.
- Effect: Corona viruses cross-species transmission with a novel human coronavirus causing the Acute Respiratory Syndrome Coronavirus.

Coronaviruses 229E and OC43 cause the common cold, the serotypes NL63 and HUK1 have also been associated with the common cold. Rarely, severe lower respiratory tract infections, including pneumonia, can occur, primarily in infants, older people, and the immunocompromised but that doesn't mean the others are immune or won't get infected.

The mortality rate:

- SARS-CoV2: The mortality rate for the confirmed cases is between 2% & 8%, and the mortality rate for overall cases is between 0.2% and 1.6% as of now and the virus pandemic is still on and the final estimates could vary.
- As on April 07, 2020: Coronavirus Cases: 1,362,105, Deaths: 76,340, Recovered: 293,655
- MERS-CoV: From 2012 until 31 January 2020, the total number of laboratory-confirmed MERS-CoV infection cases reported globally to WHO was 2519 with 866 associated deaths.
- SARS-CoV: The World Health Organization (WHO) estimated the overall fatality rate at 14% to 15%, while it was less than 1% for people younger than 25, it was 6% for those aged 25 to 44, 15% for those aged 45 to 64, and more than 50% for people 65 or older. SARS globally it killed 774 people.

Vaccine: SARS-CoV2: No Vaccine yet

- MERS-CoV: No Vaccine
- SARS-CoV; No Vaccine

Treatment: Supportive care, Oxygen therapy, IV Fluids.

III. DISCUSSIONS

As it is evident from the reports about these viruses, the pandemic like impact seems to have taken a huge toll and the battle is far from over even the Covid-19 is not done yet and there are supposed to be a second and third waves in the places where it was rampant and in other places too.

The most important observations that emerge from the analysis of this data is:

1. Threat - The Pathogen
2. Exposure- The Environment and living conditions
3. Infection- The proximity and propensity to spread
4. Diagnosis – The Assessment and prediction
5. Treatment- The ability to treat and stop the spread
6. Recovery-The ability to recuperate
7. Response- The Awareness, Planning and Responsibility along with Adaptation, Creativity and Repurposing.

In this case we have to go from the reverse order, The Response and the awareness of the threat or pathogen /Virus.

It is obvious that the threats existed as long as humans have and yet, if humans have persevered despite the threats, it is largely due to the ability to find the requisite solutions and tackle the situation. By historical references and data, the way humans coped with it seems anything ranging from ingenious to incredible to downright inhuman, and yet somehow eventually they seemed to have managed to survive and thrive. And looking at how early and modern humans have handled their problems and how they have overcome the obstacles and mitigated or succeeded in their battles against the elements, the odds and the diseases, the most striking feature has been the ability to decipher, learn and come up with solutions.

Table 1.1: MAJOR EPIDEMIC AND PANDEMICS

SL.NO	DISEASE	YEARS ACTIVE	Reported CASES	DEATHS
1	Prehistoric epidemic	Circa 3000 B.C	China	wiped out many villages
2	Plague of Athens	430 B.C	Most of Greece	100000 Greeks
3	Antonine Plague	A.D 165 -180	Most of Roman Empire	5000000 in Roman Empire
4	Plague of Cyprian	A.D 250-271	Most of Roman Empire	5000 people in Rome in just one day
5	Plague of Justinian	A.D 541-542	Most of Eurasia	10 percent of humans
6	The Black Death	1346-1353	Most of Europe	20000000
7	Cocoliztli epidemic	145-1548	No information	15000000
8	Flu Pandemic	1889-1890		1000000
9	Polio epidemic	Pre-historic ,1916,1949,1950	No information	
10	Spanish Flu	1918-1920	500000000	100000000
11	Asian Flu:	1957-1958	1100000	116000
12	AIDS pandemic and epidemic	1981-present day	75000000	35000000
13	Swine Flu H1N1	2009-2010	14000000000	575400
14	West African Ebola epidemic	2014-2016	28600	11325

Table 1.1: Describes the major epidemic and pandemic statistics.

Let's look at two distinct yet complementing facets that has helped Human cause.

Awareness and Ingenuity:

Let us take some well documented references and see how things emerged and the traditions and technology played their roles.

First, let us look at the impact of the pandemic of Covid-19. People have died in hordes in China (Wuhan), Italy, Spain, France, UK, Switzerland and now in the US. The Virus has been spreading fast and wide and is forcing a lockdown in many countries across the world. There is no country that is left untouched and there is no aspect of life that is unaffected, yet the response has been underwhelming and underprepared. And this despite having a reasonably well structured health care systems and the world being at a technological windfall with almost 90 percent of the population equipped with access to technology and information and that is the best position humanity has ever been in terms of having powerful tools at their disposal and yet this virus has found its way across seas and announced its dominance and influence over our lives.

Influence, and Influenza seem similar. Well that's where looking at facts actually helps. Seems the Italian Word Influenza also has the sense 'an outbreak of an epidemic', hence 'epidemic'. It was applied specifically to an influenza epidemic which began in Italy in 1743, later adopted in English as the name of the disease. Similarly, words like Quarantine and Self-Distancing, Social Distancing, physical distancing etc.

Quarantine: Following the Black death and understanding that the ships played an important role in the spread of the disease, the officials in the Venetian-(Italian) port city of Ragusa enforced and were able to slow the spread of the disease by keeping the arriving sailors in isolation for a few days until it was clear to the officials that the sailors were not carrying the disease—thus creating social distancing, which relied on isolation to try and slow the spread of the disease. Initially the sailors were held on their ships in isolation for 30 days (A Trentino), later the period was increased to 40 days, or A Quarantine—thus the term “quarantine” and a practice that is still used today for isolation.

Knowing the meaning is one thing knowing the importance is another but understanding the context and the implications with the right perspective is the requirement. Who holds the most say in these matters are the governments and Authorized organizations and specialized institutions? And despite the access to such information and the availability of the facts and figures, people still use unverified and unauthorized information and rely on them for decision making which is a dangerous prospect. The Response from the educated Urban has been the most disturbing. The social media and online platforms and Apps have been the worst mediums of unjustified and irresponsible outbursts and rumors that poses a huge challenge for the authorities and governments though some governments have been lax themselves without realizing that the true impact and nature of the disease and people have remained in the dark despite having the option to research and inquire and then enforce it upon to the government to act timely and act wise.

The first thing that emerged was that of denial and then controversies, then politicizing followed by vilifying which came along with an incredible amount of conspiracy theories and allegations that refuse to die even as people are losing lives and the disease and infection rates keep climbing. It is not that people are naïve or they are not concerned. The problem lies in the misplaced logic, misinformation and falsified reports and rumors. The number of Covid-Jokes clearly ridicules and undermines the efforts of the frontline medical workers, the brave municipal workers and the millions of intrepid researchers, dedicated scientists and the selfless law and order, special task forces and soldiers who are spending sleepless nights across the world in order to tackle this problem.

The poignant instances again shared thanks to the ubiquitous technology and magic tools in our hands, wherein the heart-wrenching images of the patients and casualties on the streets and morgues and hapless doctors in hospitals in Italy and Spain and New York and a heart-warming instance of the grave diggers donating their salaries to fight the Covid-19 in their city in Bangalore. There are a million questions to which there might not be a convincing answer as to why, how, what is happening and why this Virus is getting hyped response and great press, but when one looks at the alarming spread and the devastation it is evident. The Arguments that the regular flu season kills more people, the other viruses and pathogens and the climate change is more important and the fact that everyday life and livelihood of millions of manual laborers and unorganized sector works are getting hampered and the overall economic and humanitarian crisis is getting out of hand poses a lot of questions.

And we are ready to stand in judgment and question the government and the measures and everything and everybody not to mention the country of origin. We question the way it is handled and purport how it should be handled.

But, why are not questioning with an intent to be part of the solution and to each look and assess and never to let go of the crisis without learning. The various precautions and the measures have affected and altered our lives but we must realize and accept that the virus has claimed lives and destroyed communities and is wreaking havoc as of now and there is no comfort or justification for the families and friends who lost their dear ones.

IV. SUMMARY

The impact and threat and the cruelty and tragedy need not be in mythical or biblical proportions as we know that it is a real possibility. People and celebrities tend to philosophize and post tweets and messages on social media and some do it with a juvenile bent and some with a political bent and some in absurd weirdness and lack of awareness and yet people step overboard at the slightest hint and join the bandwagon either liking, disliking, retweeting or trolling without ever stopping for a moment in reflection and consideration of what is transpiring.

All the fictional Super heroes, Avengers to hardcore Arnolds are not immune to the pathogens, the Royalty has no exemptions and the celebrities are left celebrating their birthdays in masks within their homes and can merely make a video promoting the social distancing and use of masks, we must realize and accept the true heroes are those self-less people working to save lives and stopping the spread and finding a cure for the disease even as they put their lives on the line.

We are in a unique position to make better sense of ourselves, our lives and life on planet Earth and are in this position thanks to the people, the tradition of helping others and the technology on hand and helping us to look around without venturing out and to be able to assess and learn from the situation despite the challenges and the gross negative impact.

People who are being judgmental and restless are led to unnecessary actions without understanding the context and the crisis and hence not aligned to the right perspective and therefore not following the precautions and becoming irresponsible and dangerous to some extent. Why don't we all question ourselves to seek an insight into the answers for ourselves and others. Do we have the good will and intent to do what the people fighting the crisis? Do we see the frontline medical staff and volunteers rise in revolt and complain about the lack of Personal Protective Equipment and the lack of infrastructure and working conditions for them? Yet they are the ones caring for the sick. Imagine what will happen if they take their sick leaves now?

We have a sub culture of weekend getaways and strictly adhere to it, yet we don't question how the animals and birds were driven away for good from our localities and cities. And treat it as an amusement when some peacocks and Birds and reptiles show up at our homes without realizing it was their homes in the first place. We hate and take to the streets and join candlelit vigils against a Nirbhaya and assault on women, and yet share never ending spousal hatred videos and memes without a hint of respect who is cooking and feeding everyone even as you vile away in misogynistic absurdities. We complain and make sure the companies pay us while we are on the lookout for not paying the small-time laborers, domestic help and choose to ignore the under privileged in the neighborhoods.

We never sign a contract of employment without asking for all the perks and safety statutes but don't bat an eyelid to employ a security guy or a domestic help without any such basic assurances. We all gleefully participate and post pictures of the call to make it for the 5.00 Pm show of support and the 9.00 PM candle light show of solidarity, but we have never participated with the same spirit for the save water drive, cleanliness drive or the conservation drive. We write a lot on the rights and wrongs of every news that comes out yet we never question what we post and what we say and how it would impact someone even if it was not the intent. Alcohol is one of the most discussed topics and every adult engaging in that doesn't even consider that drunken driving and alcohol related crimes are one of the biggest killers of the innocent and there are many who seek alcohol illegally even during this crisis.

We complain about being locked up at our own homes with almost all the basic amenities and supplies intact and have not paid any attention that there would be millions without food and livelihood. We see our isolation as a punishment and conspiracy but haven't ever raised an objection to animals being caged and leashed. The worst is we have seen thousands of people living in shanty sheds without basic amenities and on the homeless on the streets and ignore their very existence and have never made it a point to question the authorities and the government on that?

We use the social media to tear down and troll people and the most ironical things are these. We complain of work-life imbalance and yet are able to work and do a reasonable job while shutdown at home. We complain we have no time for exercise and yet most of this free time is spent watching Netflix and on social media. We know the biggest risk category is not just age but those with compromised immune systems, those with high blood pressure and high blood glucose levels and yet are not doing what it takes to get healthier and fitter and making it a habit now.

SUGGESTIVE INTERVENTION:

Awareness and Ingenuity on the Broader front. *Earth Warrior*

Form the circle: We could use the technology to know and create awareness to form a Regional, National and Global Health Grid and Promote best practices and DIY online training, sharing and virtual training platforms for fitness & wellbeing.

Know The Threat: Region wise Health and Disease Monitoring Grid system to raise an alarm and help curtail the spread at first notice

Care by Human IT: Information to track, detect, analyse and help in stopping the spread of epidemics, helping in the research and development of vaccine

Cut the Global glut: No excess, survival is universal, responsibility is universal

Chain of Help: Create a database of doctors, hospitals, clinics, clinicians and diagnostic centers that can act as the first line of defense and report new or epidemic spurts.

Lead by Collaboration : Use it to share the approved symptoms checker and disease management App that can be shared. Provide vital and critical information for the research and development

Stop the Abuse: No gross misuse of medication, no abuse of antibiotics

Save the Earth: Educate and create awareness of and be a part of the efforts to fight against the threats and save the planet.

DIY/Optimization & Repurposing: What is important becomes scarce and scarcity invokes invention as well as the need to search for alternates, wisely using what is available and finding ways to repurpose existing capacities, products and services.

Awareness and Ingenuity on the Personal Front: *Wellbeing Warrior:*

Train the circle (Yourself-Family-Friends-Relatives-Colleagues-Employees/Staff and Domestic help, housekeeping security and support services staff. and Promote best practices and DIY online training, sharing and virtual training platforms for fitness & wellbeing.

Know Thy Threat: Know the threat so you hold it by its throat or keep it at bay

Care by Heart: All humans need a dignified life, you can respect all and do your bit

Cut the glut: No excess, survival is universal, responsibility is individual

Chain of Help: Save for others, Save the planet

Lead by Example: Common cold is a corona virus, Flu is Influenza: treat them alike and responsibility.

Stop the Abuse: No self-medication, no abuse of antibiotics

Save the Earth: All lives need to be respected, Animals lives matter too

DIY/Optimization & Repurposing: The scarcity of basics and specifics invokes the need to search for alternates while wisely using what is available and finding ways to repurpose existing capacities, products and services. E.g. Masks, sanitizers.

In the current context of the crisis triggered by the Covid-19 outbreak. And amidst such certainty and severity of the crisis, the basics of survival based on the use of existing traditions and technology must be viewed in the right perspective and see how it can come to our aid or become a potential threat or risk. Though there is a correlation between these

factors and the propensity to engage and do things in a particular manner there is not much of a meaningful deduction that can be drawn as there could be exceptions.

The reason we have to be prepared is the many previous instances have indicated the realistic danger of the pathogens coming back in the second and third wave and some lingering on even if they might have lost their initial sting but nonetheless they always take their toll and some like malaria, influenza and even common cold continue to account for lives and negatively affect the economies and productivity of people across the world.

The fact that they are always a threat and we need to know and understand them leaves us with no option but to be prepared.

On the whole, there are a few aspects that add up to ones' **Risk Preparedness Quotient**.

Risk:

A Situation that involves any exposure to some danger

To be exposed to any hazard or danger

Preparedness

Being aware, equipped and ready to face, manage and overcome any threat.

The Risk Preparedness Quotient is a quotient that determines ones' ability to anticipate, understand and respond to the Risk.

Key Factors

- Risk Awareness
- Risk Probability
- Risk Exposure
- Risk Resistance
- Risk Management
- Recovery

Risk Awareness:

- Knowing the threat in the right perspective and context
- Understanding the consequences
- Avoiding Misinformation?
- Best source of Information and guidelines?
- Train the Circle (Self, Family, Friends, Relatives, Colleagues, Employees/Staff, Domestic help, Housekeeping, security and support service staff).

Risk Probability:

- Do you fall under the risk category due to?
- Current Health Status
- Medical condition /Chronic Disease
- Lifestyle Condition /High Blood Pressure/ Diabetes
- Age
- Compromised Immunity

- Smoking/Vaping/ Alcohol /Substance Abuse habit
- Direct Exposure to risk/ due to profession/ travel

Risk Exposure:

- Contact with source of Infection
- Direct contact probability
- Indirect contact probability
- Risk due to Travel
- Community exposure

Risk Resistance:

- Immunity
- State of Health
- Hygiene
- Inoculation
- Reduced Exposure

Risk Management Capacity:

- Early detection and diagnosis
- Advanced inoculation
- Timely Interventions and sustained survival toolkit
- Support system, basic supplies and health infrastructure
- Financial standing, Insurance and back-up plan

Risk = Risk Awareness / Risk Exposure

Risk Resistance= Risk category / Risk Probability

Recovery= Risk Resistance / Risk Management Capacity

This Quotient can be used to assess your own risk, the risk resistance and Recovery prospects at a notional level and the same can be verified by using certain Apps and online protocols that helps establish the basic risk.

PLEASE NOTE: These are by no means an alternate to actual clinical diagnosis and are purely referential and be something that gets you thinking and getting into action for actual clinical and medical advice which is the best way to determine risk.

V. CONCLUSION

The wellbeing of the human kind has always depended on the ability to distinguish the threat from the opportunity and the capacity to respond and rebound despite the challenges and finding ways to combat the situation without losing perspective.

The risks and threats have always been staring at us with a deathly glare. Yet, there was always a way around the most dreadful adversary due to the inherent vision and ingenuity that helped us survive and thrive despite the odds.

And what helped humanity to do that was the various tools, traditions and technology that evolved at a rate higher than what was threatening our survival.

Throughout history, man has found alliance in the animal kingdom through domestication, and prominence over other species due to the mastery of mental faculties and material pursuits through the use of advanced use tools, traditions and technology to ensure continued dominance and exploitation of the resources. This ability has led a scenario where we stand as the most widely spread and dominant species. Yet, we find ourselves in the middle of another crisis and this time, it is thanks to our own hubris, earlier, viruses did jump species, but it was rare, but our insatiable appetite and industrial scale of consumption and the indiscriminate destruction of environment including the scary fact that we farm and kill 60 to 70 billion animals every year, including wild and exotic animals and the fact that we live in megacities with densest concentrations of people and frequent travel and interaction with people across the world, has meant that we are exposed more than ever to a calamity of biblical proportions and the epidemics and pandemics have become a regular feature and a looming danger.

We have made incredible progress in medicine and science but we have also regressed in many aspects including leaving the majority of the 7 billion humans in utter poverty and questionable living conditions.

And worse, we are letting go of the human spirit and the wisdom of wellbeing. If we can stay true to our species' name, Homo Sapiens which means the wise one and use our collective wisdom and all the tools, traditions and technologies to fight this menace we might be able to save a lot of lives and by continuing in the same rein we might be able to reverse the damage that we have done to our own kind and to the planet. In the current context, the wellbeing is challenged due to misplaced traditions, misguided misinformation and rumor mongering and a general sense of disinterest, under-preparation and disjointed efforts towards the wellbeing and common good of all. The only way we can effectively combat the threat is by looking at the wisdom within the traditions and the rightful use of the technology and resources at our disposal. The social media and connectivity devices helps us maintain the social and physical distancing and yet stay connected.

The Virtual reality can propel our efforts to become fitter, stay healthier and have a positive outlook. The wireless fidelity and digital devices can enable us to Work from home and still contribute to our professional engagement. The Online learning and connected gadgets can help us continue our education and learning. While the time that we get to spend at home and with family can help us look at our lives, communities and the world in a new way and realize where we went wrong and plan to undo the mistakes and start afresh with a renewed purpose and vigor once the threat passes and normalcy resumes.

REFERENCES

- [1] "The Black Death: The Greatest Catastrophe Ever." *History Today*, www.historytoday.com/archive/black-death-greatest-catastrophe-ever.
- [2] "The Black Death: The Greatest Catastrophe Ever." *History Today*, www.historytoday.com/archive/black-death-greatest-catastrophe-ever.
- [3] Brown, Megan N. "Antibiotic Resistance: What Are Superbugs & How Can We Fight Them? - GoodRx." *The GoodRx Prescription Savings Blog*, 21 Mar. 2019, www.goodrx.com/blog/what-is-antibiotic-resistance-how-to-fight-superbugs/.
- [4] "Business in the Time of Corona: Technologies That Organisations Can Leverage to Enable a Remote Working Environment." *Moneycontrol*, MoneyControl, www.moneycontrol.com/news/technology/business-in-the-time-of-corona-technologies-that-organisations-can-leverage-to-enable-a-remote-working-environment-5062931.html.
- [5] "Forces of Change." *Deloitte Insights*, www2.deloitte.com/us/en/insights/industry/health-care/forces-of-change-health-care.html.
- [6] Gillespie, Claire. "This Is How Many People Die From the Flu Each Year." *Health.com*, www.health.com/condition/cold-flu-sinus/how-many-people-die-of-the-flu-every-year.
- [7] Harding, Anne. "The 12 Deadliest Viruses on Earth." *LiveScience*, Purch, 4 Mar. 2020, www.livescience.com/56598-deadliest-viruses-on-earth.html.
- [8] History, All About. "Spanish Flu: The Deadliest Pandemic in History." *LiveScience*, Purch, 12 Mar. 2020, www.livescience.com/spanish-flu.html.

- [9] Jarus, Owen. "20 Of the Worst Epidemics and Pandemics in History." *LiveScience*, Purch, 20 Mar. 2020, www.livescience.com/worst-epidemics-and-pandemics-in-history.html.
- [10] Mehra, Sharad. "Online Education in Time of Corona and Beyond." *The Pioneer*, 23 Mar. 2020, www.dailypioneer.com/2020/state-editions/online-education-in-time-of-corona-and-beyond.html.
- [11] Noguchi, Yuki. "Laundry Between Emails: Working From Home Goes Viral In The Time Of Coronavirus." *NPR*, NPR, 9 Mar. 2020, www.npr.org/2020/03/09/812898220/laundry-between-emails-working-from-home-goes-viral-in-the-time-of-coronavirus.
- [12] "Poliomyelitis." *World Health Organization*, World Health Organization, www.who.int/news-room/fact-sheets/detail/poliomyelitis.
- [13] "Poliomyelitis." *World Health Organization*, World Health Organization, www.who.int/news-room/fact-sheets/detail/poliomyelitis.
- [14] "Tectonic Hypotheses of Human Evolution M. Royhan Gani and Nahid DS Gani." *Geotimes*, www.geotimes.org/jan08/article.html?id=feature_evolution.html.
- [15] "The Top 10 Causes of Death." *World Health Organization*, World Health Organization, www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death.
- [16] "Types of Healthcare: Primary, Secondary and Tertiary [Description]." *TrioTree Technologies Pvt Ltd*, 1 Aug. 2016, triotree.com/blog/healthcare-primary-secondary-and-tertiary-brief-description/.
- [17] "Types of Influenza Viruses." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 18 Nov. 2019, www.cdc.gov/flu/about/viruses/types.htm.
- [18] Wolfe, Nathan D. "ORIGINS OF MAJOR HUMAN INFECTIOUS DISEASES." *Improving Food Safety Through a One Health Approach: Workshop Summary.*, U.S. National Library of Medicine, 1 Jan. 1970, www.ncbi.nlm.nih.gov/books/NBK114494/.