



Lessons Learned from Pandemic (COVID-19)

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ABSTRACT:-

The highly contagious and virulent human coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first appeared in Wuhan, China, in late December 2019 and caused the respiratory illness known as coronavirus disease 2019 (COVID-19), which has severely disrupted daily life and had a significant impact on public health worldwide. The highly contagious and virulent human coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first appeared in Wuhan, China, in late December 2019 and caused the respiratory illness known as coronavirus disease 2019 (COVID-19), which has severely disrupted daily life and had a significant impact on public health worldwide.

Keywords: Pandemic, COVID-19, SARS-CoV-2

INTRODUCTION:-

The World Health Organization (WHO) reports that the coronavirus was discovered in Wuhan, China, on December 31, 2019, and that the first case outside of China was documented in Thailand on January 13, 2020. On March 11, 2020, the devastating virus epidemic was declared a pandemic following extensive study, forums, expert interviews and discussions, and studies [1]. Medical officials advised the public to stay indoors and avoid social interaction due to the extremely high rate of COVID-19 infection. People exposed to the virus or who had travelled to infected countries or locations were placed in isolation for 14 days and given treatment if they displayed any symptoms. Microbiology researchers and experts are certain that the virus emerged naturally and evolved to be more deadly through natural selection, even though there are numerous unsubstantiated conjectures and theories regarding how it escaped from a Wuhan lab where it was purportedly created via genetic engineering [2]. Cough, fever, and exhaustion are common symptoms; some patients may also experience headaches or diarrhoea. The fact that an infected person may not exhibit any symptoms is even worse [3–4]. Respiratory droplets from ill individuals and infected objects and surfaces spread this airborne virus. As of early May 2020, the coronavirus has been linked to over 200,000 fatalities and over 3 million confirmed infections. In general, there are more confirmed cases and deaths every day. Over 200 nations have been infected by the virus, with the United States of America having the most verified instances [5].

The quick spread of the coronavirus in developed nations demonstrates our lack of readiness for a pandemic such as this one, which necessitates prompt medical attention, law enforcement, and economic stability to maintain humankind's means of subsistence.

Even if research into technologies like artificial intelligence, 3D printing, big data analytics, high-performance computing, and telecommunications to fight COVID-19 is developing quickly [6], globally, companies and individuals are fighting to survive these extraordinary times [7]. Life as we know it has changed in the foreseeable future, and the daily routine has been upended. Economic, social, political, legal, cultural, and many other facets of life have all been influenced in one way or another, with unemployment being the largest issue of all. As a result of companies' inability to pay staff due to a lack of revenue, many individuals are being laid off. The manufacturing industry, for example, has shut down because, in addition to a lack of regulations and stringent social distancing laws, it has become impossible to retain staff when it becomes difficult to discharge.

LESSONS LEARNED FROM COVID-19:-

As COVID-19 developed daily, the media and numerous researchers did a fantastic job covering every facet of the virus. This contains daily updates on the pandemic's effects on all industries and how they are handling its challenges.

As we processed all of this material, we concluded that the global crisis had taught us some valuable lessons that the world could use should another catastrophe of this nature strike in the future.



These classes cover topics related to companies and human life, education, healthcare, the environment and economy, and working from home.

The lessons mentioned above are illustrated in Figure 1, explained in the forthcoming sub-sections.

Healthcare sector	Work from home	Economic	Environmental	Online learning
<ul style="list-style-type: none">• Digitalization of patient records and telemedicine expansion• Increased focus on preventive healthcare and public health awareness• Greater appreciation for healthcare workers and mental well-being support	<ul style="list-style-type: none">• Improved work-life balance and flexibility• Dependence on digital tools for communication and productivity• Challenges in separating work and personal life	<ul style="list-style-type: none">• Growth of e-commerce and digital payment systems• Shift towards remote and freelance job opportunities• Increased focus on financial resilience and emergency savings	<ul style="list-style-type: none">• Reduction in pollution due to decreased commuting and travel• Increased adoption of sustainable and eco-friendly practices• Need for better waste management, especially medical and disposable waste	<ul style="list-style-type: none">• Expansion of e-learning platforms and remote education• Improved accessibility to global educational resources• Challenges in student engagement and digital equity

Fig no 1:- lessons of pandemic

STRUCTURE:-

Numerous varied approaches, such as generic frameworks, studies of health care dissemination, and wide policy transfer/lesson drawing, highlight important considerations for policymaking.

Authors who serve as examples briefly describe these approaches before proposing a novel, simplified strategy that blends the realist and policy transfer approaches.

TRANSFORMATION OF THE HEALTHCARE SECTOR:-

COVID-19 has helped us realize the importance of maintaining our health and the role that the healthcare industry plays. Medical personnel work around the clock to treat people infected with the deadly illness, despite the global advice to stay at home.

Centralized patient records are needed at this time since it can be challenging for medical personnel caring for COVID-19 patients to keep track of some of them, particularly when they are moved from one hospital to another for improved monitoring and treatment [11].

To do this, the healthcare industry must begin digitizing all of its procedures and documentation.

This will ensure that patients receive effective care and that medical personnel are not overburdened with maintaining paper medical data.

Moreover, as the healthcare industry transitions to digital, modernizing digital infrastructure in healthcare facilities will become crucial.

For their operations and procedures to take place in a safe and reliable environment, appropriate security technology, controls, and administration must be implemented.



Aside from that, the COVID-19 epidemic has aided in the development and expansion of online doctor and pharmacy services, which allow users to speak with a physician or pharmacist, obtain a prescription, purchase medical supplies, or just receive health advice- all using smart devices in the convenience of their own homes [12].

Health professionals who put their lives in danger to save others should receive greater compensation and benefits to somewhat make up for the sacrifice they make on our behalf.

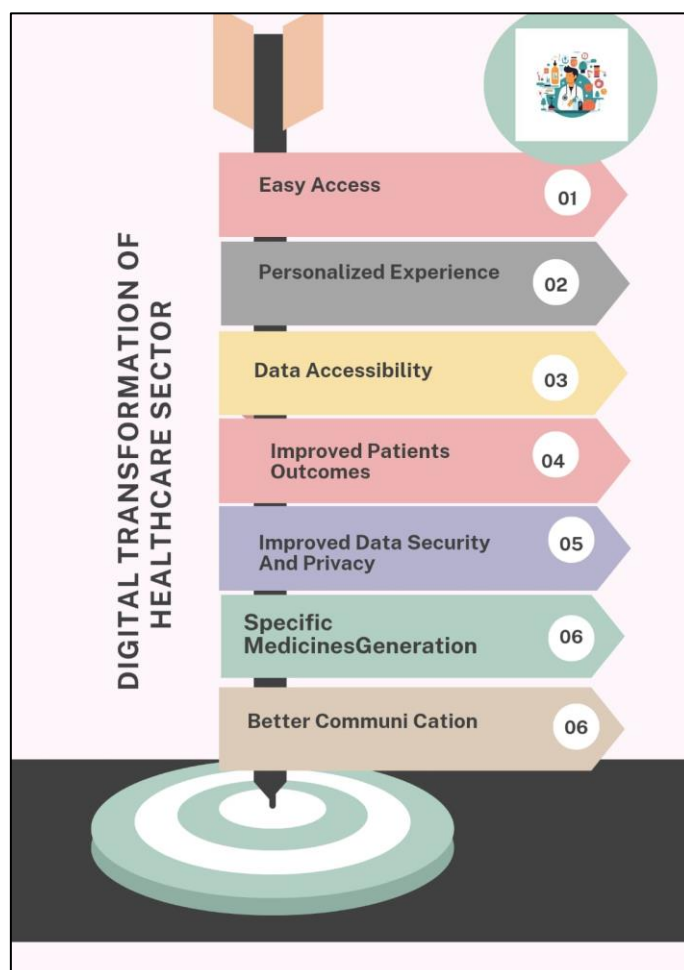


Fig no 2 :- Digital transformation of healthcare ‘

WORKING FROM HOME IS HIGHLY POSSIBLE:-

Governments all around the world implemented the Movement Control Order, which made individuals remain in their homes.

In turn, this led to the implementation of the Work from Home (WFH) policy, which allowed workers to resume working from home.

Although some may contend that working from home is not the ideal option, research shows that employees who do so not only have higher productivity levels, which leads to them completing more work, but also find it simpler to strike a balance between work and life [13 - 14].

Since they don't have to commute as much, employees may be able to devote more time to their designated responsibilities.

Employees may also effectively manage their days such that, if a job is not time-sensitive, they can spread it out throughout the day rather than having to sit in one spot to work.



The only thing an employee needs to work in this new, incredibly comfortable way of living is the Internet.

Additionally, because they do not have all the resources they are accustomed to at work, employees have become more resourceful in overcoming obstacles at work as a result of the WFH policy.

For instance, a brainstorming session or meeting that used to take place in person with co-workers is now conducted electronically with significantly less time and effort.



Fig no3:- work from home

ECONOMIC:-

We discovered that our worldwide supply chain is not resilient and is brittle.

Around the world, supply chains have drastically slowed since the early months of the pandemic in 2020 [15].

Shortages of labour and resources, varying demand, and blocked shipping channels affected almost every industry, from medical supplies to the automotive industry [15].

There are shortages of domestic suppliers, according to approximately 60% of construction enterprises and over 60% of industrial companies [15].

Defects in our healthcare supply chain were also exposed by the COVID-19 epidemic. Many healthcare professionals were forced to work in hazardous conditions due to a lack of personal protective equipment (PPE), donning trash bags and even ski goggles out of extreme need [16].

The year 2020 saw a heightened danger of drug shortages as a result of the sudden increase in demand for medications needed by hospitalized patients, especially those who are severely ill or on mechanical ventilation [17 - 18].

The FDA started gathering voluntary data on inventory levels, distribution amounts, and production schedules from manufacturers and healthcare groups to better understand the supply chain and its difficulties [17].

The FDA used all available regulatory tools to address drug shortages, according to its 2020 Drug Shortages Report to Congress. These included issuing specific drug compounding allowances, increasing supplies of albuterol, etomidate, heparin, propofol, and midazolam, and expediting over 100 original abbreviated new drug applications for medications used in the treatment of COVID-19 patients [17].



The United States Pharmacopeia (USP), the American Medical Association (AMA), the American Society of Anaesthesiologists (ASA), the American Society of Health-System Pharmacists (ASHP), the Association for Clinical Oncology (ASCO), and others joined forces in December 2021 to release five major recommendations aimed at enhancing the resilience and quality of the US health care supply chain [18].

Enhancing international cooperation, improving the Strategic National Stockpile, encouraging quality, expanding the Coronavirus Aid, Relief, and Economic Security (CARES) Act to include medical device manufacturing in addition to drug manufacturing, and providing incentives for critical drug manufacturing technology were among the recommendations [18].

No matter the sector, the COVID-19 epidemic has shown that to maintain business continuity and future growth, firms must rethink and manage their supply chain.

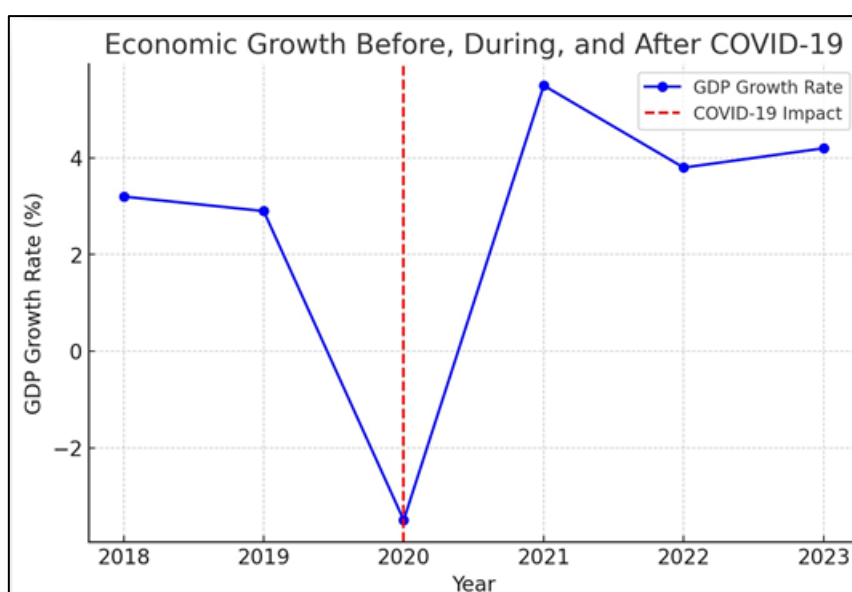


Fig no 4 ; Economic growth before and after covid

ENVIRONMENTAL:-

We discovered that without action, climate change won't go away.

The influence of the COVID-19 epidemic on the planet itself was one of its maybe unanticipated effects. Within weeks of the pandemic lockdowns, air pollution and greenhouse gas emissions significantly fell due to restrictions on travel and other human activities [19].

According to a thorough NASA investigation, carbon dioxide emissions decreased by 5.4% in 2020, yet the amount of carbon dioxide in the atmosphere grew at the same pace, most likely as a result of natural processes [19].

Rapid reductions in ozone pollution were also caused by COVID-related drops in nitrogen oxides. Sadly, the reduction in emissions did not affect the amount of methane in the atmosphere; instead, it increased by 0.3%, which is higher than any rate seen in the previous ten years [19].

In addition, emissions most likely reached pre-pandemic levels by the end of 2020. Cutting down on any early-month gains. Nevertheless, Scientists were encouraged by the atmospheric advantage seen in the brief time frame in the first several months of 2020.

The Results indicate that long-term energy improvements in infrastructure and reductions in industrial and residential industries are necessary to prevent the adverse consequences of climate change.



We Learned That Human Activity Can and Will Result in Future Pathogens

One of the most concerning aspects of the COVID-19 pandemic is that the exact origins of SARS-CoV-2 are still unknown.

Be. At first, it was thought that the virus leaped from animals to people at a wet market in China in the city of Wuhan [20].

"Wet markets," as they are known, offer a variety of fresh produce for sale in addition to live animals and are called for the habit of hosing down floors after closing time [20].

But reports of the Huainan wet mar. There are rows and rows of piled cages described as being kept in Wuhan. Where purchasers might watch live animals being killed on-site, several eateries in the area promote "yawed" (wild flavour) [20].

Researchers have traced nearly all of the first 20 COVID-19 cases to the Huainan market with impartial data, but there is still debate regarding whether there was animal-to-human transfer or human-to-human transmission [20].

Furthermore, none of the 80,000 antagonist mal samples tested by the WHO contained the SARS-CoV-2 virus, though researchers also argue that Infections that spread quickly are frequently eradicated [20].

The Conditions in certain wet marketplaces are considered indicative of a broader problem of many animals living in inhumane conditions housed there.

Zoological viral transmission might be made significantly less likely if people adjust their conduct toward the environment.

Decreasing habitat damage, enhancing industrialized livestock production, and other conservation-related efforts are needed to safeguard other species as well as our own [21].

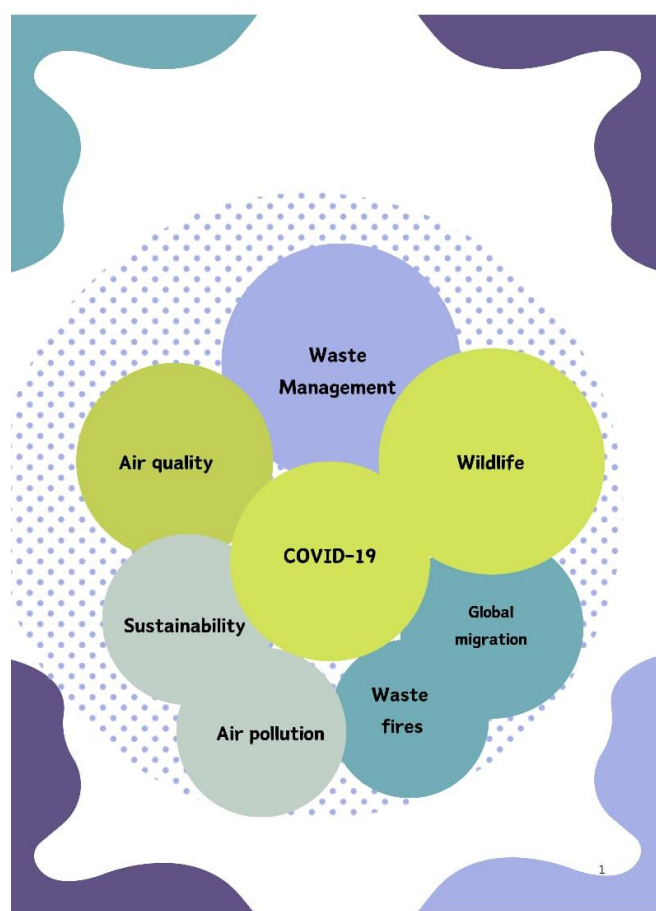


Fig 5:- Environmental factors



ONLINE LEARNING:-

All educational institutions have been instructed to close to prevent the virus from spreading, which has caused significant disruptions to traditional teaching and learning as well as an impact on students' social lives.

Students have lost the chance to develop their social awareness and abilities for an indeterminate amount of time, particularly those who have just begun attending school [22].

Academicians have been directed by universities to conduct lessons electronically, utilizing online technologies and services that may or may not have been tested previously to continue the teaching and learning process.

When academicians use online meetings and learning platforms to deliver study material, they find themselves in a teaching environment where every student is seated by a computer screen.

Additionally, it is no longer feasible to administer tests, quizzes, practical labs, visas, or examinations, among other conventional and standard evaluation methods.

To get around this problem, online tests have temporarily taken the role of these tests to gauge student achievement [23–24].

Furthermore, in light of all the flaws, grading guidelines, assessment policies, and the general syllabus structure are all being examined to make sure students receive fair evaluations.

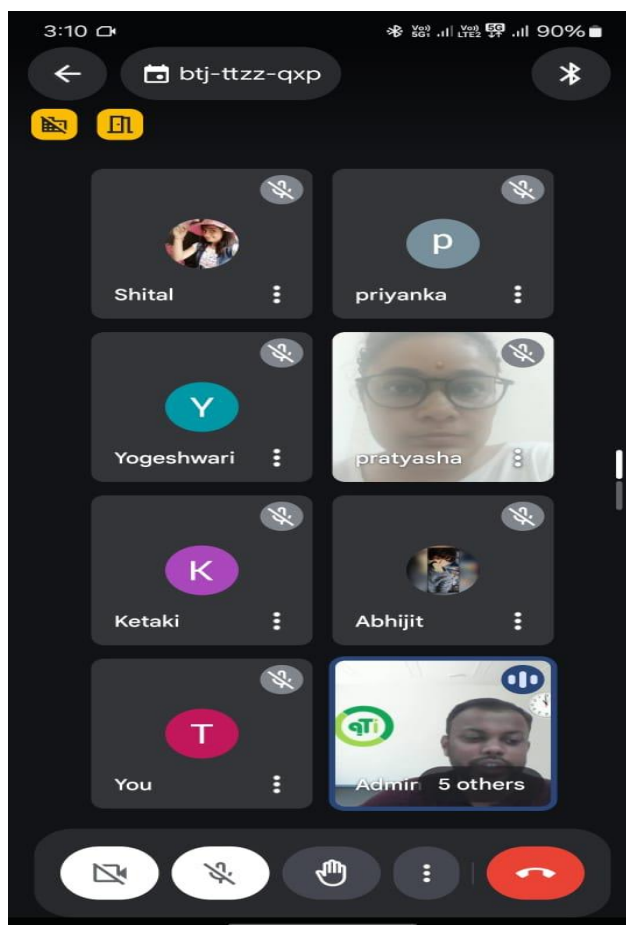


Fig no 6:- Online education



CONCLUSION:-

As we go about our daily lives in tandem with the current epidemic, several problems are rapidly emerging. Some of the problems have been addressed too soon thus far because they are not entirely clear. Backup plans that are ready right away.

On the other hand, other problems are being handled as best as can be, but no one knows how to resolve them, so everyone gets by with little to no harm.

These are just a few of the many important lessons that COVID-19 has imparted to us all. Be ready for everything that could happen since there might be more to come.

In the face of a pandemic like COVID-19, keeping an eye on global events and making plans for emergencies will prove to be a wise course of action.

In the future, governments and authorities ought to prioritize cyber security while concentrating more on changing the healthcare industry.

This is a result of every industry moving toward maximum internet presence to maintain corporate operations.

Additionally, studies on medical systems and technologies that can support viral containment and eradication have to be ongoing to solve an issue while it is still in its early stages.

To prevent people from dying of starvation instead of the pandemic itself, governments should set aside a certain portion of their annual budget to provide financial assistance to companies to help them survive during economic downturns and funding for individuals in need so they don't lose their jobs.

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