Innotransformative Trajectory of the Pandemic Covid-19

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Abstract: *The data on Coronavirus were changing on daily basis, and it was difficult to provide current statistics for the affected, recovered and casualties. However, based on some initial studies, a few characteristics were emerging for this virus. This paper is based on the review of published papers in journals and news papers about multifaced effects of the pandemic. The review shows that there is an innovative transformation in the form of the trajectory of the pandemic in different spears of human life. Starting from the event in China its spread in 97% of the nations created economic, social, psychological, environmental, ethical and work life issues. The result of the studies upon the pandemic is exhaustive and only selected spears were analysed to arrive at the conclusion of its transformative results and characteristics.*

Key Words: *Pandemic, Innotransformation, Trajectory, Multifaceted Effects.*

Introduction

The novel Coronavirus (COVID-19) is a humanitarian emergency, which started in Wuhan in China in early December 2019, brought into the notice of the authorities in late December, early January 2020, and, after investigation, was declared as an emergency in the third week of January 2020. The WHO declared this as Public Health Emergency of International Concern (PHEIC) on 31th of January 2020, and finally a pandemic on 11th March 2020. As on 4th February 2021 there were 10,51,31,248 coronavirus cases, 22,84,215 deaths and 7,68,53,341 recovered cases (www.worldometers.info).

This paper is based on the review of scientific papers published related to selected topics about Covid-19 pandemic. Most of the data are based on the abstracts published as well as the chosen data within the full text of the articles that showed how multifaceted results like the trajectory of the pandemic evolved in the entire course of the illness and its spread across the nations.

Infodemic and Emerging Issues

"We're not just fighting an epidemic; we're fighting an infodemic", said WHO Director–General Tedros Adhanom Ghebreyesus at the Munich Security Conference on 15 February 2020. WHO Information Network for Epidemics (EPI-WIN) was launched as a new information platform after WHO declared COVID-19 as a Public Health Emergency of International Concern (PHEIC). The goal was to share customized information with specific target groups as per the study of Zaroncostas, J. (2020). Finally, on 11th March, WHO declared it as a pandemic. "We know that every outbreak will be accompanied by a kind of tsunami of information, but also within this information you always have misinformation, rumours, etc. We know that even in the Middle Ages there was this phenomenon. But the difference now with social media is that this phenomenon is amplified, it goes faster and further, like the viruses that travel with people and go faster and further. So, it is a new challenge, and the challenge is the timing, because you need to be faster if you want to fill the void... What is at stake during an outbreak is making sure people will do the right thing to control the disease or to mitigate its impact. So, it is not only information to make sure people are informed; it is also making sure people are informed to act appropriately", said Sylvie Briand, Director of Infectious Hazards Management at WHO's Health Emergencies Program and architect of WHO's strategy to counter the infodemic risk. This poses the real challenge of mitigating the risk occurring from Coronavirus. One of the key issues of the "invisible disaster" is obtaining correct information.

It was reported that the case-fatality-rate (CFR) for Coronavirus was 2.3%, initially; however, the age group of 70 to 79 had an 8% CFR, and CFR was 14.6% for those more than 80 years old (WHO, 2019). This meant that the virus had a stronger impact on the aged population. The other characteristic of the virus was its speed in spreading. When Dr. Zhong Nan Shan made a public announcement of this virus in CCTV on the 20th of January, the virus had already spread in different provinces in China, as well as outside China. Every day, some new countries are added to the list, which had already reached 219 countries and territories (worldometer). It took only 30 days to spread from one city to the entire country of China. The early cases might have been spread from the Wuhan seafood market, while later cases were spread from person to person, the speed of which surprised the health

workers in Wuhan city and Hubei province. The epidemic curve found in (Wu, Zet al., 2020), showed that the second to the third week of January was the most crucial time, when the spread was very high. There were some similarities and differences among COVID-19, Severe Acute Respiratory Syndrome: 2002–2003 (SARS) and Middle East Respiratory Syndrome: 2012-ongoing (MARS). SARS also had a zoonotic transmission in markets in Guangdong Province, China. It was said that COVID-19 was likely to have been transmitted from bats via palm civets. Similarly, MERS was also traced to zoonotic transmission of a novel coronavirus (likely from bats via dromedary camels) in Saudi Arabia. All three viruses had similar syndromes like fever and cough, which frequently lead to lower respiratory tract disease. However, SARS had a higher CFR of 9.6%, while MARS was even higher at a rate of 34.4%. Despite much higher CFRs for SARS and MERS, COVID-19 had led to more total deaths due to the large number of cases.

The pandemic outbreak was initially found in Wuhan China lead us to the importance studied upon the perspectives of China in the early part of the pandemic. The review from the study of T. Xu et al., (2020) is highlighted as follows.

China Perspectives

1. Improve the Public Health Emergency Management System

   China needs to continue to carry out top level design for building institutions and mechanisms, improve the monitoring system for public health emergencies, and achieve networked and accurate management. China should improve the emergency response mechanism for major outbreaks, establish a centralized, unified and efficient leadership and command system, and improve our ability to respond to major public health emergencies (Wang Q, 2020). China should strengthen cross-provincial, cross-regional and departmental communication, and collaboration mechanisms.

2. Optimize the Public Health Service System

   China should strengthen the development of a contingency plan system for public health emergencies, formulate contingency plans by category, and specify and standardize the specific contents of such plans. China should focus on improving the ability of medical institutions and public

health administrative departments at all levels to respond to and manage public health emergencies. China should increase investment in medical and health resources, strengthen the public health workforce and personnel training, and improve the personnel structure. China should establish an evaluation and incentive system for medical personnel and improve their remuneration.

3. Strengthen the Rule of Law in Public Health

   China should repair the wildlife protection act. The wild animals carrying the virus are included in the fasting list, the areas of endangered wild animals are strictly protected, and the punishments for those who eat and sell wild animals are clearly defined (The Standing Committee of the National People's Congress, 2020). China should strengthen publicity of the laws on the prevention and treatment of infectious diseases enacted in China and comprehensively improves our ability to prevent and control infectious diseases in accordance with the law.

4. Raise Public Health Awareness

   China should intensify efforts to publicize the prevention and treatment of infectious diseases, and conduct popular science education to the general public through the preparation of publicity manuals, popular science books, new online media and other forms. In the community, experts and doctors of infectious diseases will be invited to give training lectures on popular science, so that the public can learn basic knowledge and ideas of epidemic prevention and have basic skills to deal with sudden infectious diseases.

5. Facilitate International Exchanges and Cooperation

   China should learn from the advanced public health emergency management system across the world, such as World Health Organization, including emergency management organization system, operation mode, early warning and monitoring, scientific research and experiment, and civic education. China should actively participate in international academic exchanges on epidemic prevention and control, work closely with counterparts around the world to share research results, and fight against infectious disease.

Psychological Impact

There were studies that highlighted the psychological impact of the COVID-19 pandemic on frontline workers. The pandemic had led to features of generalized anxiety and poor sleep quality that was significantly associated with factors such as the female gender and availability of Personal Protection

Equipments. The findings underscore the need to identify Health Care Workers (HCWs) at risk at an early stage and enable comprehensive, tiered, as well as situation-tailored mitigation measures, enhancing the HCWs' psychological resilience and alleviating their vulnerability in the present pandemic conditions. Limitations of working hours, special training to manage patients with COVID-19, availability of adequate quality PPE, along with timely and appropriate mental health support through multidisciplinary teams were vital elements of such mitigation measures. These efforts were essential because of the impact of anxiety on not only HCWs' personal wellbeing but also on health care delivery overall, which might be affected by the HCWs' potentially impaired decision-making ability, judgement, and attention (Bhawna Gupta et al, 2020).

Yet other studies provided evidence that COVID-19 had severe impact on psychological stressors, fear and anxiety, and poor sleep outcomes (Huang Y et al., 2020, Choi EPH et al., 2020, Ahorsu DK et al., 2020, Jahrami H et al., 2020). High anxiety levels during the pandemic had been strongly associated with functional impairments, alcohol or drug coping, negative religious coping, extreme hopelessness, and passive suicidal ideation (Lee SA, 2020). Similarly, problematic sleep was associated with adverse consequences on the patient's psychological, social, and cognitive functioning, which leads to deterioration of the overall quality of life (Szentkirályi A et al., 2009). Health care workers (HCWs, including doctors, nurses, dentists, and paramedics) are regarded as the saviours of human life; nevertheless, they remain wounded by the psychological consequences of COVID-19. Frontline workers in particular, who are directly involved in management of patients with COVID-19, are at a greater risk than others (Spoorthy MS et al., 2020, Shanafelt T et al., 2020, Esakandari H et al., 2020). Initial estimates suggest that frontline HCWs account for 10%-20% of all COVID-19 diagnoses (Nguyen LH et al., 2020). In India, with a population of approximately 1.3 billion (worldometer-population) and a doctor-population ratio of 1:1800 (Deo MG, 2013), the already inadequate public health care system has crumbled during the COVID-19 pandemic, further pushing frontline HCWs to the edge. Moreover, HCWs are vulnerable to physical and psychological fatigue and poor sleep outcomes due to increased workload, physical exhaustion with irregular work schedules, frequent work shifts (Zhang C et al., 2020), and the occasional need to make ethically challenging decisions, including rationing of care (Chan-Yeung M, 2004, Lai J et al., 2020, Kline

C et al., 2013). They were also constantly challenged by isolation and lived with an omnipresent fear of contracting the infection themselves or transmitting it to their families. This fear seemed to be a major factor causing a psychological impact among HCWs, apart from separation from families, shortage of personal protective equipment (PPE), lack of essential intensive care units, as well as universally and rapidly changing guidelines on disease transmission and treatment that further add to their stress. Multiple cognitive behavioural theoretical models have suggested that the following factors contribute to the severity of healthanxiety: memory and attention process, misinterpretation of health-related stimuli, and maladaptive beliefs and behaviours (Taylor S, 2019). Research on HCWs has revealed that approximately 50% of physicians have reported poor sleep quality during the pandemic, which may be attributed to the contagious nature of COVID-19 (Qiu D et al., 2020) and the emergency nature of their work (Zhang C et al., 2020).

An online survey conducted by University of Arkansas for Medical Sciences to assess and ensure "wellbeing" of their physicians found that the primary worry of all HCWs was the safety of their families during the COVID-19 pandemic, which was regarded as a major anxiety stress factor (Berg S,2020).

The study by Shu Wang et al., (2020) found that 11.0–13.3% of participants had anxiety, depression, or insomnia symptoms and that 1.9–2.7% had severe psychological distress or sleep problems during the outbreak of COVID-19.

Researchers have conducted multiple investigations of the consequences of the disruptive routine changes experienced by most individuals due to the COVID-19 pandemic. Some common impacts include disturbed eating behaviours such as increased comfort food consumption (Scarmozzino, F., et al., 2020), eating in response to stress and boredom, a snacking after dinner (Zachary, Z et al., 2020), decreased physical activity (PA) (Ammar, A. et al., 2020), and either significant increases (Neill, E et al., 2020) or reductions (Ammar, A. et al., 2020), in alcohol consumption. An important consequence of this pandemic has been the global psychological distress; multiple researchers have found increased prevalence of pandemic-related psychiatric morbidity and psychological distress (Smith, L et al., 2020, Gómez-Salgado, J., et al, 2020). The higher prevalence of anxiety and stress-related disorders may be purely pandemic related, such as fears that oneself or a loved one will contract the virus, and generalized uncertainty about the

future (Troyer, E.A. et al., 2020), but the direct biological effects of the virus itself on the central nervous system (CNS) are unknown. A meta-analysis from previous coronavirus infections revealed that common symptoms during the acute phase of the infection were depressed mood, anxiety, confusion, and impaired memory. If SARS-CoV-2 follows a similar course to that of previous coronaviruses, patients should recover from psychiatric symptoms without experiencing mental illness (Rogers, J.P. et al., 2020). The act of quarantining itself adds a facet to mental health deterioration (Smith, L et al., 2020). For example, anxiety and depression prevalence almost doubled in participants who had to quarantine or whose friends and family had to quarantine compared with participants who did not (Lei, L. et al., 2020).

Comorbid Health Issues

Lucia et al (2021) explained that the diverse clinical manifestations of COVID-19 were emerging as a hallmark of the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) infection. While the initial target of SARS-CoV-2 is the respiratory tract, it is becoming increasingly clear that there is a complex interaction between the virus and the immune system ranging from mild to controlling responses to exuberant and dysfunctional multi-tissue directed autoimmune responses. The immune system plays a dual role in COVID-19, being implicated in both the anti-viral response and in the acute progression of the disease, with a dysregulated response represented by the marked cytokine release syndrome, macrophage activation, and systemic hyperinflammation. It has been speculated that these immunological changes may induce the loss of tolerance and/or trigger chronic inflammation. In particular, molecular mimicry, bystander activation and epitope spreading are well-established proposed mechanisms to explain this correlation with the likely contribution of HLA alleles. We performed a systematic literature review to evaluate the COVID-19-related autoimmune/rheumatic disorders reported between January and September 2020. In particular, we investigated the cases of incident haematological autoimmune manifestations, connective tissue diseases, antiphospholipid syndrome/antibodies, vasculitis, Kawasaki-like syndromes, acute arthritis, autoimmune-like skin lesions, and neurologic autoimmune conditions such as Guillain–Barr´e syndrome. We screened 6263 articles and report herein the findings of 382 select reports which allow us to conclude that there are 2 faces of the immune response against

SARS-CoV-2, that include a benign virus controlling immune response and a many faceted ranges of dysregulated multi-tissue and organ directed autoimmune responses that provides a major challenge in the management of this viral disease. The number of cases for each disease varied significantly while there were no reported cases of adult onset Still disease, systemic sclerosis, or inflammatory myositis.

Sung A Bae et al (2020) stated that in the previous studies evaluated cardiovascular risk factors thatconsidered age as a potential confounder. Sung's study was aimed to investigate the impact of cardiovascular disease (CVD) and its risk factors on fatal outcomes according to age in patients with COVID-19. A systematic literature review and meta-analysis was performed on data collected from Pub Med and Embase databases up to 11 June 2020. All observational studies (case series or cohort studies) that assessed in-hospital patients were included, except those involving the paediatric population. Prevalence rates of comorbid diseases and clinical outcomes were stratified by mean patient age in each study. The primary outcome measure was a composite fatal outcome of severe COVID-19 or death. Results included 51 studies with a total of 48 317 patients with confirmed COVID-19 infection. Overall, the relative risk of developing severe COVID-19 or death was significantly higher in patients with risk factors for CVD (hypertension: OR 2.50, 95% CI 2.15 to 2.90; diabetes: 2.25, 95% CI 1.89 to 2.69) and CVD (3.11, 95% 2.55 to 3.79). Younger patients had a lower prevalence of hypertension, diabetes and CVD compared with older patients; however, the relative risk of fatal outcomes was higher among the former. The results of the meta-analysis suggest that CVD and its risk factors (hypertension and diabetes) were closely related to fatal outcomes in COVID-19 for patients across all ages. Although young patients had lower prevalence rates of cardiovascular comorbidities than elderly patients, relative risk of fatal outcome in young patients with hypertension, diabetes and CVD was higher than in elderly patients.

Digital Technology and Telemedicine during Pandemic

According to Davide Golinelli (2020), the COVID-19 pandemic is favouring digital transitions in many industries and in society as a whole. Health care organizations have responded to the first phase of the pandemic by rapidly adopting digital solutions and advanced technology tools. The aim of this review is to describe the digital solutions that have been reported in the early

scientific literature to mitigate the impact of COVID-19 on individuals and health systems. We conducted a systematic review of early COVID-19–related literature (from January 1 to April 30, 2020) by searching MEDLINE and med Rxiv with appropriate terms to find relevant literature on the use of digital technologies in response to the pandemic. The search identified 269 articles, of which 124 fulltext articles were assessed and included in the review after screening. Most of the selected articles addressed the use of digital technologies for diagnosis, surveillance, and prevention.

Karanvir Kaushal et al., (2020) had elucidated the role of artificial intelligence (AI) in therapeutics for coronavirus disease 2019 (COVID19). Five databases were searched (December 2019–May 2020). Out of 31 studies included, 16 studies applied AI for drug repurposing, whereas 10 studies utilized AI for novel drug discovery. Only four studies used AI technology for vaccine development, whereas one study generated stable antibodies against SARS-CoV-2 (:severe acute respiratory syndrome coronavirus). Approx. 50% of studies exclusively targeted 3CLpro (3-chymotrypsinlike protease) of SARSCoV-2, and only two studies targeted ACE (angiotensin-converting enzyme)/TMPSS2 (transmembrane protease serine 2) for inhibiting host viral interactions. Around 16% of the identified drugs are in different phases of clinical evaluation against COVID-19. AI has emerged as a promising solution of COVID-19 therapeutics.

Gates B. Colbert et al., 2020, studied that, telehealth has become a central piece in patient healthcare delivery during COVID-19 pandemic era. Telehealth allows health care services to reach patients in their homes, keeping other patients safe through social distancing and maintaining self-quarantine. Within this administration of health, TH allows health care providers to focus more resources to pandemic usage and at the same time continue caring for the health of non-COVID-19 patients.

The Vulnerable and the Marginalised

Rajib Acharya et al., (2020), reported that despite the Indian Government's efforts to contain the disease in the affected districts, cases have been reported in 627 (98%) of 640 districts. A number of districts in nine large states—Bihar, Madhya Pradesh, Telangana, Jharkhand, Uttar Pradesh, Maharashtra, West Bengal, Odisha, and Gujarat—located in every region of the country except the northeast, were found to have high overall vulnerability (index value more than 0·75).

According to Srilakshmi Bellamkonda (2020), COVID-19 has further marginalised people with disabilities. The Department of Empowerment of Persons with Disabilities (DEPWD) recognises that PWDs are more vulnerable to the virus because of their physical, sensory, and cognitive limitations. These limitations come in the way of their capacity to access, interpret, and use the information and services being made available to deal with COVID-19, and can lead to further marginalisation.

Unprotected workers, including the self-employed casual and migrant workers, are likely to be hit by the virus as they do not have access to paid or sick leave mechanisms, and are less protected by conventional social protection mechanisms and other forms of income smoothing. Migrant workers are particularly vulnerable to the impact of the COVID-19 crisis, which will constrain both their ability to access their places of work and or return to their families in their natives.

In India 90% of work force is in unorganized sector. The sector is characterized by low wages and inadequate social security and most susceptible to exogenous economic vicissitudes. The COVID 19 outbreak and standstill of economic activities will have distressing impact on poor marginalized.

The lockdown has already disproportionately hurt marginalized communities due to loss of livelihood and lack of food, shelter, health, and other basic needs. The government does have a responsibility to protect the health and wellbeing of the population, but some of these steps have left tens of thousands of out-of-work migrant workers stranded, with rail and bus services shut down. The blanket closing of state borders had caused disruption in the supply of essential goods, leading to inflation and fear of shortages. Thousands of homeless people are in need of protection. Police actions to punish those violating orders have reportedly resulted in abuses against people in need.

As per the report of Human Rights Watch, Indian migrant workers during the COVID-19 pandemic have faced multiple hardships. With factories and workplaces shut down due to the lockdown imposed in the country, millions of migrant workers had to deal with the loss of income, food shortages and uncertainty about their future (Slater et al, 2020, Singh et al, 2020). Following this, many of them and their families went hungry (Abi-Habib et al., 2020). Thousands of them then began walking back home, with no means of transport due to the lockdown leading them to infirmities and death.

According to Rashid et al., (2020), among the various categories of migrant labourers in India, one category is of the seasonal workers employed in agriculture and related activities. Data shows that the agricultural labourers, who take upon rural to rural inter district and interstate seasonal migration, predominantly belong to the Scheduled Caste and Scheduled Tribe categories, making them one of the most deprived strata of the rural hierarchy. With their mobility restricted this very section faces one of the greatest brunt of the pandemic lockdown. In order to fully gauge the harshness of the blow that has befallen on these agricultural labouring classes, the pandemic has to be situated within the context of the pre COVID-19 economic conditions. Women labourers fared even worse receiving four fifths of the wages that were paid out to men in the harvest and postharvest agricultural operations (The Economic Times, 2020).

Manisha et al., (2020), studied that the global pandemic and the lockdown had brought to light the dire ethical repercussions of neglecting structural influences while designing and implementing policies. Now more than before, the experiences of vulnerable communities are increasingly finding prominence. However, the intersections of structures of power are yet to be considered significant enough to respond effectively. The insights we have gained make it imperative to use a gender and intersectionality lens to understand and mitigate the deprivations that have stemmed from Covid-19 and the lockdown.

Social Problems, Livelihood and Living

The New Leam, 2020, reported that the spread of COVID-19 is posing a serious threat before the tribal community and has made the tribal population more vulnerable than ever before. Low immunity and weak healthcare structures are making them increasingly vulnerable to the virus. We need to note that the greater chunk of minor forest produce is collected between the months of April and June every year. However, this year these months have coincided with the nationwide lockdown, the report underlies how the lockdown has resulted in extensive difficulties for the tribes as far collecting the forest produce is concerned and therefore effecting their livelihoods for the entire year. The report also brings to light another important aspect related to the problem of the tribes and it is related to increased diversion of forest land for other purposes and putting severe restrictions on the movement of tribes. This tenurial insecurity is looming like a big threat for the tribes. The other challenges that the tribes are facing are afforestation, diversion of ancestral

forest land, displacement and loss of livelihoods. Another matter of great concern is the fact that the union environmental ministry has used this time to clear many forest diversion proposals and has issued new guidelines relating to forest and environmental clearance norms for mining by new lessees when people have been confined due to the lockdown and cannot come out even if they have to protest. Many lost their job. There was huge plight of the migrant workers to their natives on account of the lockdown when all work stood still.

Socio-Economic Impacts

While the nationwide lockdown has resulted in financial losses and has affected all segments of society, the dominant effect on health, healthcare and nutrition could possibly pose major setbacks to previously gained successes of National health programs. Apart from firm economic measures, all National Health Programs should be restrengthened to avert possible surge of communicable (apart from COVID 19) and non-communicable diseases. These efforts should be focussed on population belonging to low socio-economic stratum.

Real Gross Domestic Product (GDP) growth had been estimated by the Reserve Bank of India (RBI) at 6.2% in 2019-20 (RBI, 2020). The International Monetary Fund however, lowered India's growth forecast by 1.3% points to 4.8% for 2019-20 and stated that India's growth had slowed sharply (Mishra A R, 2020). It is selfevident, therefore, that an economy already affected by slow growth in the previous fiscal year would be severely affected by the lockdown as a result of the pandemic. The Small and Medium Enterprises market ratings project that the nationwide lockdown is expected to incur losses of over $4.5 billion (₹ 35,000 crores) every day during the lockdown (The Hindu businessline, 2020). The healthcare sector, the fourthlargest employer in the country, and specifically the private sector which provides nearly 80% of out-patient care and about 60% of in-patient care (MoHFW, 2015) is currently facing 90% losses due to decreases in out-patient attendance, elective surgeries and international patients (Sharma NC, 2020). During the current pandemic, the economic downturn has greatly affected people from the lower socio-economic stratum (SES). The distressing media visuals of migrant labourers going to their native places from the cities on foot during the lockdown has been critically debated. Remittance of

money to the home country, which many migrant Indian workers popularly do, is another way of poverty reduction, economic development and increase in GDP. About $139 billion (₹ 1042500 crores) was remitted to low and middle income (LMICs) countries of South Asia from countries of work (e.g. Gulf countries) in the year 2019 (Guermond V., et al., 2020). The disruption caused by COVID 19 has had a significant impact on these remittance flows. Importantly, remittances are projected to fall by about 23% in India in 2020, to $64 billion (₹ 4,80,000 crores) in striking contrast to a growth of 5.5% and receipts of $83 billion (₹ 6,20,000 crores) seen in 2019 (Press Trust of India W., 2020). The World Economic Forum states that in the current pandemic situation, migrants stuck abroad trying to cope with the exigencies will compromise to the adverse circumstances, by taking up low wage jobs, live in poor working conditions, restrict spending and thus, risk exposure to infections like the coronavirus (Guermond V., et al., 2020). The scenario among the internal migrant workers (intra and inter-state) in India is equally grim. These workers constituting the informal sector, total to a staggering 139 million and are about 93% of the workforce (Mishra HH., 2020). About 50% of migrant workers stated that they had rations for less than a day when interviewed (Saini S. , 2020). Further, the study by Stranded Workers Action Network showed that 89% of the stranded workers had not been paid wages by their employers during the first 21 days of lockdown and that 74% had less than half their daily wages to live on (Edwin T. , 2020). The economic impact of this pandemic is likely to be more severe for India in the following manner; (a) increase in poverty i.e., pushing more people below poverty line (Anser MK et al., 2020), (b) worsening of socio-economic inequalities (Mahendra Dev S., 2020, Saini S., 2020), thus affecting health and nutrition indices, and (c) compromise in health-related precautions (use of masks, social distancing, seeking medical advice in case of cough and fever etc.). All these would have major long-term associations with health indicators.

Education and Digital Technology

SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis of Some Educational Impacts of the Coronavirus Pandemic.

Strengths (Advantages)	**Opportunities**
a. Accelerates the adoption of virtual instruction b. Fosters expertise in virtual andragogy c. Promotes virtual work d. Accelerates hybrid models for student and trainee onboarding e. Fosters reassessment of the need for administrative physical space in academic medical centres f. Instances of enhanced teamwork, participation, and communication compared with prior face-to-face work g. Can enhance participation in virtual meetings, either because travel time to physical meetings is curtailed or because some who are normally reluctant to participate in live meetings may find the "chat box" a more comfortable option	a. Energizes strategies to optimize virtual work and virtual teaching and learning (eg, develop "playbooks") b. Chance to improve virtual student/trainee onboarding c. Tighten the interface between undergraduate medical education and graduate medical education (eg, by focusing on areas of common impact like virtual interviewing, holistic assessment, and diversity and inclusion) d. Leading through crisis e. Discover and strengthen personal attributes of compassion, resilience, and posttraumatic growth
Weaknesses (Disadvantages)	**Threats (Ongoing Challenges)**
Conditions at home may be distracting for some a. Loss of spontaneous interactions (ie, no "water cooler" dialogs) b. Loss of opportunity for important in-person ceremonies/ celebrations (eg, graduations for medical student and trainees) c. Risk of erosion of camaraderie d. Increased need to supply equipment for work from home (eg, laptops, headsets, monitors) e. Loss of hands-on training for procedures (eg, cadaver dissection, procedural training) that are difficult to replicate virtually f. Loss of hands-on training for direct patient interaction (eg, objective structured clinical examinations) g. Faculty discomfort with virtual teaching h. Challenges to student/trainee onboarding and orientation i. "Zoom" (virtual meeting) fatigue	Accelerated loss to the workforce of those averse to or challenged in adapting to virtual work a. For clinicians and trainees, loss of networking and learning due to the inability to attend/present at conferences b. For trainees, concerns over risk of not graduating or being certified because of lack of clinical hours/experience c. Concerns by students and trainees about moving to new places (during transitions from medical school to residency or residency to fellowship) without prior opportunities to visit d. Concerns by trainees that financial losses by health care institutions might cause posttraining job offers to be rescinded e. Budgetary shortfalls that have been widely experienced by hospitals following the pandemic could curtail funding for education at a time when educational innovation is needed.

Source: James K. Stoller (2020)

Work Life Transits

The COVID-19 pandemic has forced families to try to maintain work-family balance with few supports. With schools and daycare facilities closed, parents are solely responsible for childcare and perhaps even home-schooling. Yet, many parents are also working their paid jobs from home, while others have heightened financial concerns due to losing their job, and yet others involved in healthcare may be living away from their families to reduce exposing them to the virus. Whatever the circumstance, work-family balance has become increasingly challenging. There has been much discussion on how the pandemic will likely exacerbate gender inequalities, with women being forced to do even more domestic labour given the circumstances (Ruppanner et al., 2020).

Drawing upon the employee isolation literature, Akanksha Jaiswal C etal., (2020) aimed to examine the impact of work from home on employees during the lockdown. This investigation would help us learn about the nature and quality of work in the context of the current crisis. Towards this, we conducted in-depth interviews with 24 middle and senior level managers across manufacturing and technology enabled service sectors in India and analysed the data using MAXQDA software. Employees reported an increase in working hours, major changes in their roles, reduced levels of productivity, and increased levels of stress. Besides these findings, we discovered sparks of creativity among employees during this isolation period. These creative steps were either towards nurturing oneself for career growth or towards solving long pending organizational issues. Interestingly, the creativity was self initiated. Our findings have key implications for organizations and their leaders who need to revisit work-from-home policies for the future workforce. We highlight our theoretical contributions and outline the scope for future research.

This study makes two important contributions to the literature. Despite the numerous challenges in its implementation, the work-from-home model during the COVID-19 pandemic has been a revelation for employees and organizations. Mapping to the situational theory, work-from-home was an immediate response to the pandemic. However, going forward, organizations will have to adapt themselves to the drastically changing ecosystem. Thus, our findings shed light on the organizational adaptation theory (Felstead et al., 2002) concerning the work-from-home model in the post-lockdown and

pandemic-recovery situation. Organizations will have to reflect upon their current processes and redesign functioning to readjust and conform to the changes happening in the societal context. The adaptation process would include taking cues from the general and economic conditions, the changing nature of employees' work, their readiness to return to work, and the psychological impact of the crisis on their attitude and well-being.

Health care workers on the front line who are directly involved in the diagnosis, treatment and care of patients with COVID-19 are at risk of developing psychological distress and other mental health symptoms (Sharma T., 2020).

Even those who were previously sceptical about achieving efficiency in distributed teams are now embracing it as a new way of working. Up grading and making use of digital platforms to stay connected. The more self-awareness needs about work style, find ways to work smarter, not harder. Perhaps it is time that the expression "work-life balance'' is laid to rest, and, in its place, we use the term 'work-life integration'. People who make this transition may well find that their resilience is strengthened because the mindset is about accepting and incorporating multiple demands upon our time and talents, between work, health, responsibility and family (Aruna et al., 2020).

Eco Trajectory

According to the study of Harekrishna Bar (2020), in the lockdown period, the levels of nitrogen dioxide (NO_2) and carbon emission remarkably decrease in atmosphere due to restricted consumption of fossil fuel by industries, thermal power stations and air transportations. The concentration of NO_2 dropped by 45–54% in the atmosphere of most populated cities in Europe. The intensities of particulate matters PM2.5 and PM10 decreased by 43% and 31% respectively, at lower atmosphere indicating improvement in air qualities in different parts of world caused by less traffic and construction activities. New deserted bank has developed due to less river activities in this period. Noise pollution remarkably dropped below 60 db even in crowded cities. Thus, the atmospheric environment has resumed some extent in all respect by means of such global-wide lockdown aiming to control COVID-19 pandemic. The behavioural changes of wild animals, birds, butterfly, pets and street animals that reflected on ecosystem of their relative region indicate

the non-interference of human activities on lives of natural creatures during lockdown period. There is certain correlation between atmospheric change with the behavioural changes of natural creature during lockdown period.

According to Tanjena et al., 2020, the global outbreak of coronavirus disease 2019 (COVID-19) is affecting every part of human lives, including the physical world. The measures taken to control the spread of the virus and the slowdown of economic activities have significant effects on the environment. This study indicates that, the pandemic situation significantly improves air quality in different cities across the world, reduces Green House Gases emission, lessens water pollution and noise, and reduces the pressure on the tourist destinations, which may assist with the restoration of the ecological system. In addition, there are also some negative consequences of COVID-19, such as increase of medical waste, haphazard use and disposal of disinfectants, mask, and gloves; and burden of untreated wastes continuously endangering the environment.

COVID-19 is causing severe damage to economies and societies, it has augmented the environment as pollution has reduced significantly (Chakraborty and Maity, 2020). Due to COVID-19, governments have imposed restrictions on the movement of people, vehicles, and suspended industrial activities (Zambrano-Monserrate et al., 2020). The consequences of such lockdowns have been remarkable, as pollution levels have dropped significantly; for instance, greenhouse gas emissions, nitrogen dioxide, black carbon and water pollution have decreased drastically (Chakraborty and Maity, 2020; Saadat et al., 2020; Tobías et al., 2020; Wang and Su, 2020; Zambrano-Monserrate et al., 2020).

Ethical Probs in Vaccination

Beth P et al., 2020 explained that the continued global spread of the coronavirus disease 2019 (COVID-19) pandemic highlighted the pressing need for safe and effective COVID-19 vaccines.Vaccine development efforts of unprecedented scale and speed are being pursued. Since June 2020, the Advisory Committee on Immunization Practices (ACIP) has held 4 public meetings to lay the ground work for public health recommendations for COVID-19 vaccines. In September 2020, the ACIP endorsed 4 interim ethical principles, central to the development and implementation of recommendations for COVID-19 vaccine use, including in the setting of a constrained supply — maximizing benefits and minimizing harms; equity;

justice; and fairness. Transparency, a fifth key principle, was considered foundational to ethical decision-making. Transparency is essential to foster public trust and ensures that allocation decisions are clear and open for review and public engagement.

Masking and Personality

The word person comes from the Greek word, 'Persona', meaning 'mask'. Hence personality is something hidden by mask. Widespread use of face coverings is a key public health strategy to prevent the spread of COVID-19. However, few studies have examined why Americans use or do not use face coverings, and little is known about the most effective messaging strategies. This study explored perceptions of face coverings, including motivations and barriers for use, and examined reactions to messaging promoting the use of face coverings. Six virtual focus groups were conducted with 34 North Carolina residents in July 2020. Participants reported high compliance with face covering recommendations but often did not wear them around family, friends, and colleagues. The most prevalent motivation for the use of face coverings was to protect or respect other people, including high-risk populations and individuals. Other motivators were self-protection, responsibility, desire for control, requirements, and expert advice. Barriers included physical and social discomfort, confusion or misinformation, low perceived susceptibility to COVID-19, and perceptions of identity and autonomy. Even among individuals who frequently wear face coverings, there are opportunities to improve compliance. Messaging should highlight how face coverings protect the wearer and others around them, normalize the use of face coverings in social settings, and emphasize requirements. Positive messages that focus on unity, personal experiences and the rationale for face coverings are recommended (Victoria S, 2020). Thus, mask use is a reflection upon the personality positively and negatively.

Conclusion

The information available from published scientific papers on the pandemic Covid-19 reflected through this paper shows that there was multifaceted effect of the pandemic across the Globe. Although it was a health problem it affected human life in all spheres, animal and plant life as well. It had its positive and negative results in society, economy, political and work life. It had created transformation in the day today lives of everyone even if one had not contracted the corona virus. The loss of life, property, job, and

business created a vacuum in the human history adding a resetting in the natural order of ecocentrism in human life. The results of the mega disaster would be further devastating and creating a paradigm shift in the very futuristic aspirations of everyone across the world. Hence everyone has a responsibility to repair the damage caused to individual, familial and national lives and to rebuild the society to get back to normalcy at the earliest through innotransformative means and methods. It is a challenge and at the same time a sense of satisfaction.

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