

“SILVER LINING IN THE COVID CLOUD” – Lessons Learned from the COVID-19 Pandemic

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ABSTRACT

The ongoing pandemic COVID-19 had been one of the most gruesome medical disasters the world had experienced in the millennia. The sudden case hikes and death numbers multiplying each day even in the most advanced Western countries, the world was literally brought to a standstill. The health-care system buckled under the burden of increasing cases, global travel, and trade ceased overnight, economies crashed. In the face of such an unprecedented adversity, the negative impacts of the pandemic have been studied widely. This article is an attempt to understand and compile the positive changes as well as cope-up strategies that have been adopted in India and across the world to combat this pandemic. The positive outcomes experienced during the lockdown period have been analyzed, citing evidences from research articles published in peer-reviewed journals in the field of health, education, environment, and psychiatry. The results revealed that there are positive changes too in all of these realms, which are never brought to light. Situations like the present times are inevitable and no way to be glorified, but the analysis of its brighter side is in fact the celebration of our strength on the face of the pandemic. Such analyses are essential as they may prove as references in the future.

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INTRODUCTION

On December 31, 2019, China reported a sudden outbreak of a series of cases of unexplained pneumonia associated with a suspected zoonotic transmission from a local seafood market. With an exponential rise in the number of cases in the following months, the disease took the form of a pandemic, with confirmed human-to-human transmission. The causative organism was identified as the SARS-CoV-2 virus, and the disease named as COVID-19. The early months of 2020 witnessed a state of complete lockdown in different parts of the world including developed countries like the United States. The entire world had come to a standstill at multiple domains such as health, economy, education, industry, and so on. Given the circumstances, the human race has rather coped up much faster to such a paralyzing situation. It is the dire need of the hour to focus on the positive impacts of the situation, as well as document the strategies, we adopted to cope well with the crisis. This could be of reference and great assistance let there emerged a similar situation in the future. In this article, we would like to focus on and highlight the positive impact of COVID-19 in boosting the health awareness – both physical and mental, among the population. Furthermore, a brief outline of the social outcome of the pandemic is being discussed, giving importance to the cope-up strategies.

PHYSICAL HEALTH

The hustle of the daily life often robs one off the personal time that has to be essentially devoted to self-care. With the advent of industrialization, the long working hours, irregular sleep-wake patterns, unhealthy diet habits, physical inactivity, and continuous psychological stress had resulted in a sudden hike in the number of non-communicable diseases. The majority of deaths in the high-income countries are due to non-communicable diseases, whereas in the lower income countries, infectious diseases cause major mortality. According to the 2017 world data, hypertension,

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tobacco smoking, and hyperglycemia are rated top among the risk factors for global death followed by air pollution and obesity.^[1] The Government of India census statistics for the last decade ranks non-communicable diseases as the top cause of death at 49.2% followed by communicable and malnutritional diseases at 27.74%.^[2] Hence, the news of pandemic offering poor outcomes with existing comorbidities such as diabetes and hypertension had been a wake-up call for many of the countries including India.

The global spread of COVID-19 has had positive impact on physical fitness in terms of both physical activities and dietary habits. Constandt *et al.* in their study of 13,515 Belgium adults noted a significant increase in the intensity and duration of physical activity among the participants even during lockdown.^[3] In a cross-sectional study of 1110 Indian adults during lockdown, it was found that 64.54% of the participants were engaged in physical exercises throughout the period of lockdown.^[4] These results best prove the social cognitive theory, which suggests that the environmental influence, that is, threatened health, rather than the social influence like peer pressure or motivation, accounts for changed exercise levels and patterns during a lockdown.^[3]

Various national and international organizations launched campaigns probing the common people to prioritize health and physical fitness. Prime minister's slogan "*fitness ki dose, aadha ghanta roz*" (½ h of physical activity as the daily dose for fitness) highlights the governmental efforts to encourage the public. Yoga, Zumba, and aerobics started getting popularized as fitness tools for the entire family. Online lessons, sports apps, and fitness challenges in the social media helped to keep the younger population motivated.

As far as diet is concerned, there has been a remarkable improvement in the quality as well the timing of food intake, at least in the family settings. In a cross-sectional audit of lifestyle-related responses among Indian adults, Chopra *et al.* noted an improvement in the eating behaviors among the young adults (<30 years) marked by intake of regular meals rich in pulses, egg and meat, and reduced intake of unhealthy diet.^[5] Similar findings were elicited from Italian survey, where the young adult population (18–30 years) was found to be shifting more to the traditional Mediterranean diet.^[6] Certain experts believe that a fraction of population may have marginally improved metabolism and other health outcomes during the COVID-19 pandemic by switching to healthier dietary behaviors: (i) Reducing meal frequency, (ii) consuming regular (i.e. breakfast [about 40% of daily total energy]), lunch (30% of daily total energy), and dinner (30% of daily total energy) and having good quality meals (e.g., more fresh vegetables, good quality protein source, avoiding refined, and high glycemic foods).^[7]

In the backdrop of the pandemic, there has been a drastic fall in the patients visiting hospital across the world. A German study, after 4 weeks of lockdown, noted a massive drop of 63.8% in the patients visiting pediatric emergency department, with an absolute drop of 70.8% in the cases of communicable diseases.^[8] This could be either due to apprehension among the people or due to an absolute decline in the communicable diseases due to the strict physical distancing and social isolation measures. In densely populated countries like India too, there has been a decline in hospital visits due to infectious diseases such as dengue, malaria, and flu-like illness, though, real-time data are yet to be published. Experts anticipate a decline in the sexually transmitted infections (STIs) such as AIDS and syphilis, during the lockdown. In an observational study in Rome's largest STI clinic, there has been a significant drop in the cases of syphilis in the early lockdown period.^[9] More studies are yet to be conducted to understand the trend across the world.

ENVIRONMENT

The complete lockdown restrictions have had highly favorable impacts on environment. Within the 1st weeks of lockdown, there has been a remarkable reduction in the electricity consumption in the industrial states such as Tamil Nadu and Maharashtra, by 9.2% and 5%, respectively.^[10]

In India, the coal-fired power generation declined by 15% in March 2020 and 30% in April 2020, with a total reduction of fossil fuel consumption by 18% compared to the previous year data.^[11,12] Furthermore, the complete shutdown of the industries has drastically reduced the toxic emissions of SO₂, NO₂, NH₃, and particulate matter – PM₁₀ and PM_{2.5} in the city of Delhi. Various research studies on air quality index before and after the lockdown had showed nearly 60% improvements in the air quality in the industrial areas of Delhi.^[13] The lockdown

had witnessed a significant improvement in the health of the major river basins in the east like Ganga, Yamuna, and Dwarka. A comparative analysis of the water parameters in five hotspot locations along Yamuna revealed a significant improvement in the pH and dissolved oxygen, with reduction in the biological oxygen demand, chemical oxygen demand, and electrical conductivity.^[14] The water quality and depth improved in the Ganges replenishing the aquatic life-endangered South Asian dolphins were spotted in the Ganges after 30 years. The water in different levels from Rishikesh to Haridwar was found to be fit for drinking purposes after chlorination. In spite of the Ganga action plans (GAP) and the ambitious Namami Gange project, it is the lockdown restrictions that had revived Ganga.^[15] The lessons from the lockdown period can be utilized to develop a future perspective in GAP by ensuring stringent regulatory measures, reduction in the burden of water abstraction, and proper industrial sewage treatment.

MENTAL HEALTH

Every individual plays multiple roles in his life in personal, professional, and social domains. For emotional well-being, one must maintain a subtle balance between all these realms. This is a herculean task in the present social circumstances. According to the research findings, 10.7% of the world population is suffering from mental illness with a major share of it contributed by anxiety and depression.^[16] In India, the escalating population had contributed to mental unrest in terms of increased competition for the relatively static resources. There has been a large-scale migration from rural areas to the cities in search of employment, education, and better standards of living. This has resulted in the fragmentation of the families. Once in the cities, the peer pressure and performance pressure further keep the individual occupied in his profession, thereby consuming the time that ought to be spent for the strengthening of the personal ties. The lockdown during COVID-19 has given an opportunity to stay together as a family. In spite of the job layoffs and educational setbacks, the institution of family has helped to cope up better. For the 1st time, many parents could share their personal time and space with their kids and vice-versa. From physical exercise to performing household chores, the complete participation of the family was noted. The aptitude and proficiency of the family members started getting attention and appreciation. The panic attacks and suicidal stunts would have been much higher had there not been the strong support rendered by family and friends. With escalating cases of suicides, the subject of mental health had received paramount importance with various institutions such as the National Institute of Mental Health and Neuro-Sciences, All India Institute of Medical Sciences, Indian Psychiatric Society taking independent initiatives in the form of telemedicine services, online counseling programs, and influencer talks. The MOHFW-GOI has issued a toll-free helpline numbers for "Behavioral Health," the psychosocial health – which could be of assistance to anyone suffering from psychological breakdown during the COVID-19 pandemic. The state governments have also set-up regional helpline numbers and telecounseling services to offer prompt health information and assurance.

EDUCATION

In the education sector, the virtual classrooms and the smart learning applications have improved the accessibility of education

to a large number of students on a common digital platform, anywhere across the globe. The technological advancements have opened an unlimited global access to contents for personal development both in terms of formal education and skill training. Lost years in education could be regained, passions revisited, relationships rekindled, and humanitarian principles revived through the combined efforts of technology and social media. In India, MHRD and UGC have taken initiatives such as SWAYAM online courses, UG-PG MOOCs, e-PATHSHALA, and SWAYAMPBABA to digitalize the educational system and ensure free access to students nationwide. Edtech applications such as Zoom and Google Meet have redefined the scope of technology in offering uninterrupted quality online education.

SOCIAL HEALTH

According to the famous sociologist August Comte, man is a social animal. The social set-up deeply influences and defines the human behavior and modifies his personal responses. The pandemic has helped to marginalize the socioeconomic, gender, and cultural disparities that otherwise divided the human race. The needless luxuries during celebrations (like marriage) were replaced by essential bare minimum, both due to lockdown impositions and impending financial crisis. The unnecessary social hobbies such as shopping, dining out, and leisure trips have been sidelined by the concept of minimalism due to the forceful restrictions of lockdown. To a large section of the society, this has indirectly alleviated the undue stress of earning more to put up with such social trends.

Adversities such as the present one evokes an altruistic instinct across the population. Even during the grim phase of pandemic, the social media was flooded with news of philanthropic gestures from all sects of the society- the craftsmen who started making masks at a cheaper rate, Michelin chefs who started launching free food campaigns and religious groups helping the stranded migrant workers are a few examples to highlight such positive social changes. In the present time, when hygiene is not merely a personal choice, but rather a social responsibility, there has been a notable improvement in community hygiene, the positive impacts of which are already visible by the reduced spread of infectious diseases this year. The younger generations have been instilled with disciplined lifestyle and hygiene practices, and are likely to sustain better health outcomes in the future. The lessons of compassion, cooperation, and coexistence taught by the virus have changed the social outlook and will improve both physical and mental health of the society in the long run.

HEALTH PRACTICES

The pandemic era witnessed a resurgence of many traditional health systems to the frontline, Ayurveda being foremost. The prophylactic use of *rasayana* drugs such as *Aswagandha*,^[17] *Guduchi*,^[18] and *Yashtimadhu*^[19] not only acts as immunomodulators but has profound benefits on the psyche.

The propagation of Ayush Kwath by the Ministry of AYUSH has repopularized the downfallen practice of using kitchen herbs for promoting health. The contents such as dried ginger, holy basil, cinnamon, and black pepper are easily available, economically feasible, and can be made at home, hence, instantly accepted by the population. Each of the ingredient possesses specific benefits on the immune system – Tulsi^[20] is antimicrobial, antiviral, anti-inflammatory, and possesses antioxidant properties. The cinnamon

bark^[21] possesses immune stimulant activity as evidenced by *in vitro* studies showing significantly increased phagocytic index, serum immunoglobulin levels, and antibody titer and decreased the percentage reductions in neutrophil count. Ginger^[22] contains bioactive compounds such as nevirapine, β -sitosterol, 6-gingediol, germacrene, and methyl-6-shogaol which are known to inhibit viral replication; among these, the most potent inhibitors of reverse transcriptase enzyme is β -sitosterol. Black pepper^[23] possesses immune modulatory, antioxidant, antiplatelets, antihypertensive, anti-asthmatic, antipyretic, analgesic, anti-inflammatory, anti-diarrheal, and antimicrobial properties. Besides, black pepper also possesses antiallergic properties by suppressing the levels of Ig E and stabilizing the mast cells. With large number of the population being benefitted from the traditional health-care systems, there has been a drastic increase in the number of researches going on in the field. As of July 2020, out of the total of 203 clinical trials registered under CTRI, 105 were of AYUSH interventions.^[24]

The practice of yoga for physical and mental well-being has been widely popularized during the lockdown period. Yogic practices are well proven to reduce perceived stress and anxiety by downregulating the HPA axis as demonstrated by the reduced salivary cortisol levels after 12 weeks of yogic practice in the study group as compared to the control.^[25] Joshi et al. proved that 6 weeks of pranayama improved ventilatory functions as evidenced by lowered respiratory rate, increased forced vital capacity, peak expiratory flow rate, maximum voluntary ventilation, and prolongation of breath holding time.^[26] Yogic practices are proven to exert antihypertensive effect by restoring the baroreceptor sensitivity and hence beneficial in patients of essential hypertension.^[27,28] Multiple studies evidence the hypoglycemic effect of yoga practice, postulating the possibility of neurohormonal modulation involving enhanced sensitivity of beta-cells to glucose signals.^[29]

The complexities of the virus and the failure to develop targeted therapies have increased the acceptance of the traditional concepts of disease prevention and health promotion. This opportunity should be utilized for developing an integrated health-care practice in India to deliver better clinical outcomes.

CONCLUSION

Health is a state of dynamic equilibrium where even subtle behavioral changes cause drastic challenges to the well-being of the individual. The last few decades have witnessed an increasing rate of lethal mutagenesis among the viruses and the resultant human transmission posing threats of pandemic situation. From disease prevention to health promotion, there is yet a long way to traverse. Every human has a right to attain the best achievable state of health, utilizing services from the different disciplines of life sciences. The current situation, although has crippled the community to a large extent, has also given valuable lessons of integration and mutual cooperation for the future. There should be efforts to study and document the positive impacts of the pandemic on the various realms of life. These data will serve as essential requisites in the development of effective strategies in the future, if need arises.

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