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Coronavirus disease-2019: Challenges, opportunities, and benefits in India

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Abstract:

BACKGROUND: The human coronavirus was first identified in 1965, belongs to the same family of Viruses as SARS, MERS-Co. The current virus that affected worldwide came into existence in late 2019, recently found in Wuhan, China, and caused a global pandemic called coronavirus disease-2019 (COVID-19). This disease became a quick global pandemic due to the rapid transmission of the virus from one human to another. In the history of humankind, people were inside the four walls for more than a month. The COVID-19 pandemic has posed significant problems in a variety of fields. The current pandemic created many changes that are seen as challenges worldwide. However, it created opportunities and benefits for many, extend a helping hand towards the people in need, in the society, community, and the nation. This paper focuses on challenges, opportunities, and benefits during the (COVID-19) pandemic in India.

MATERIALS AND METHODS: Online search engines like PubMed and Google Scholar were used to conduct the research. The review article's dates were not restricted in any way. A total of 48 articles were chosen. The data was tabulated based on the kind of study and the outcomes. There are just a few papers available that demonstrate the necessity for more study.

RESULTS: COVID-19 caused unforeseen changes in the health care industry, unequal distribution of health care, and consequences on mental health, according to the review studies. Teleconsultation, Internet use, and E-learning have all become more accessible. A period of transitory economic collapse and an increase in the number of migrants left many despondent. Improvement in family bonding, use of a face mask, and hygiene measures to adapt to the current scenario. There was also an impact on water sources, waste management systems, and environmental resource conservation.

CONCLUSION: Difficult conditions can provide both problems and opportunities and advantages to the people during a pandemic outbreak.

Keywords:

Acute respiratory syndrome, challenges, coronavirus, coronavirus infections, coronavirus disease-19, opportunities, pandemics

Introduction

Although the year 2020 started with a happy note, slowly, fear and anxiety curbed human society due to the widespread coronavirus. WHO declared this as coronavirus disease-2019 (COVID-19) pandemic by early march 2020 due to the global health crisis. Worldwide eminent leaders of many countries acted meticulously and tried their best to find ways to minimize the spread of the virus-like

testing, supportive treatment to affected patients, tracing, and quarantining those who came into contact with the person who was afflicted. The government also stopped the people from traveling and having big gatherings. All became a standstill within a flick of a movement.

The COVID-19 epidemic has posed extraordinary hurdles in all fields. It's no longer an issue of whether or not businesses have been harmed, but rather which industries have been harmed to what extent. For practically every sector of the economy,

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especially early-stage companies, the COVID-19 situation is unparalleled. In terms of damage assessment, the travel and hospitality business has sustained significant losses, and these two sectors that take the longest to re-emerge as a result of the new normal.

This paper focuses on challenges, opportunities, and benefits during the (COVID-19) pandemic in India. Sometimes desperate situations bring not only challenges but also abundant opportunities and benefits in the community.

Materials and Methods

Study design and setting

This review paper comprised quantitative research undertaken from 2020 to the present day to examine the challenges, opportunities, and benefits resulting from COVID-19.

Data collection and technique

Original research, meta-analysis, and systematic reviews were among the publications chosen. The absence of a full version of an article was one of the reasons for its exclusion.

Identification

PubMed and Google Scholar were the online search engines used to gather journals. (Due to time constraint only two databases were selected). The authors found articles using keywords as a guide. The articles were gathered in their entirety. There were 110 articles found in total, with 50 being chosen for review.

Screening and data extraction

The articles were screened with the keywords. For selecting, extracting COVID-19, Coronavirus, Pandemics, Severe Acute Respiratory Syndrome, Coronavirus Infections, Challenges, Opportunities key words were used. The data was tabulated based on the findings, and the level of evidence was organized based on the challenges, benefits, and opportunities encountered during COVID 19.

Ethical consideration

The study protocol presented to Ethics Committee and the ethical code of this study is NF/CON/12/IEC/2020.

This review included articles published in English language only and published in peer review journals alone. The study excluded expert editorial opinion and case studies.

Coronavirus (SARS-CoV-2) belongs to a large family from where the SARS and MERS-CoV were found. In 1965, scientists first identified a human coronavirus,

which belongs to a vast group of viruses. Seven types of coronaviruses can infect humans. SARS was one of the viruses identified in 2002 in southern China. In 2012, in Saudi Arabia, a virus from this group-MERS-CoV infected many. SARS-CoV-2 is the coronavirus strain that produces COVID-19, the current pandemic.^[1] The recent epidemic of a new coronavirus illness in Wuhan, China, began in early December 2019. It has quickly spread throughout the world and has become the most serious pandemic illness of the 21st century. However, starting in March 2020, the number of cases and COVID-19-related deaths outside of China (all over the world) soared.^[2]

As per a review by Singhal the clinical features ranged from asymptomatic to slightly symptomatic illness to life-threatening pneumonia and multiorgan failure. Symptoms include fever, cough, malaise, exhaustion, headache, and dyspnea. As a result, they are challenging to identify from other frequent respiratory viral illnesses.^[3]

COVID-19 pandemic: The challenges

The current pandemic, creating changes in all the ways, like our daily routine, socializing, and communication, compared with the previous days we usually had. Similarly, these changes were experienced by everyone all around the globe. The government, irrespective of all the countries, primarily initiated a lockdown with guidelines like social distancing, wearing masks, and sanitization for the public. The schools, colleges, malls, theatres, businesses, and places where the public may gather were shut except emergency services. The common public faced more difficulties in coping with unexpected abrupt changes. It created many challenges to health sectors, self-employed, company workers, voluntary organizations, local communities irrespective of caste, creed, and socioeconomic classification, nationally and worldwide.

A article published by Rahaman *et al.* analyzed the current need for food security in developing countries. COVID-19 has raised the danger of losing one's livelihood due to food shortages and supply chain disruptions, particularly in underdeveloped nations where rural areas rely on agriculture output and seasonal occupations. As a result, if they are compelled to restrict their activities, their livelihoods will be obliterated.^[4]

Medical treatment and health effects

Tabish explored the significance of COVID on public health. It is commonly assumed that therapy suffers during the COVID epidemic. Patients with cancer are either ignored or do not have access to high-quality treatment and medications. Patients with diabetes had difficulty treating their condition in a suitable health institution. Patients who require renal dialysis suffer as

a result of a lack of medical treatment or transportation. Pregnant women in rural regions and those in cities confront significant challenges during delivery. Those suffering from heart illness are unable to get to hospitals in time for treatment.^[5]

A study conclusion by Ghosh *et al.* reveals that patients were concerned about treatment delays and are more concerned about cancer progression than SARS-CoV-2 infection, as well as that patients' comprehension of the interactions between chemotherapy and immunosuppression is lacking. As a result, the current consensus guidelines for delaying or postponing anticancer therapy in our oncology patients must be thoroughly addressed and tailored to each patient's disease condition, stage, and treatment aim. On the other hand, patients and their families require ongoing counseling and reassurance at each visit, wherever possible.^[6]

A literature search by Gopalan and Misra inspected the challenges following lockdown. The authors concluded that to minimize long-term negative health impacts, the COVID19 pandemic has necessitated a holistic approach to poor and marginalized populations. Economic constraints must be relieved for the entire people, and legislative improvements must be enacted promptly. Finally, national health initiatives for communicable and noncommunicable diseases (NCDs) such as diabetes, hypertension, and cardiovascular disease must be revived and enhanced. Furthermore, because NCDs often begin early in India, even younger persons are at risk for COVID19.^[7]

The lockdown may promote weight gain owing to decreased physical activity, increased snacking, and intake of calorie-dense foods during the COVID19 pandemic. According to Ghosh *et al.*, carbohydrate consumption and snacking frequency increased by 21% and 23%, respectively, while exercise duration was reduced in 42% of patients and weight gain occurred in 19% of type 2 diabetes patients.^[8]

The Indian national blood transfusion committee recently proposed a 28-day donor deferral period following the final vaccine dosage. It could result in a significant drop in qualified blood donors, jeopardizing the already strained blood supply management caused by the COVID-19 outbreak.^[9]

A decrease in physical activity was noted by Chopra *et al.* and increased daily screen time, particularly among men and the upper socioeconomic stratum. One-fourth of the individuals, quarantine caused stress and anxiety. COVID-19 improved eating habits slightly; one-third of individuals gained weight as physical activity decreased and screen or sitting time increased.^[10]

Child health

Throughout the lockdown, children were not permitted to go out of their houses. Children's fundamental right to play was restricted, which affected their physical and mental health. Many questions were not answered by most of the parents as they were only uncertain about anything.

As per Gupta and Jawanda kids lacked external physical activity, had different diseases, were prone to nutrition deficits and were not immunized.^[11]

Unequal distribution of health care

Tirupakuzhi Vijayaraghavan *et al.* expressed that the health care is overburdened due to scarce resources. If the country allotted limited resources for the health care delivery process, the COVID pandemic has worsened the burden. As the number of cases heightened and the severity of the COVID cases, the Workforce and health-care delivery systems are concentrated only on caring for COVID patients and unintentionally neglecting non-COVID patients in many situations. Countries including India struggled with not having adequate personal protective items for health care workers and frontline warriors like N95 masks, PPE, and even test kits.^[12]

Pramesh and Badwe noticed there was a high priority for those who may benefit from treatment for potentially curable diseases, whereas for those for whom treatment is expected to have marginal benefit, care is postponed with palliative intent.^[13]

Mental health

D'Cruz and Banerjee expressed persons living with dementia will have under-stimulation due to reduced social engagement, which can exacerbate cognitive deterioration in sensitive individuals. Lockdowns are limiting possibilities for physical and cognitively stimulating activities all around the world, including in India.^[14]

Views by Berg-Weger and Morley concludes, visits by friends and relatives are also restricted in the community, in acute care, and long-term care facilities, such as nursing homes. In dementia patients, social isolation and loneliness are likely to aggravate cognitive impairments.^[15]

Golechha analyzed the psychosocial challenges due to lockdown. Lockdown has become a difficult policy for the poorer sections of society due to India's health disparities, growing economic and social gaps, and different cultural views. The country's large population of migrants and daily laborers has been crippled by the national lockdown, which has resulted in substantial

economic losses and a severe mental health crisis. The mental health concerns that have arisen due to this worldwide catastrophe may develop into long-term health problems, isolating and stigmatizing the country's most vulnerable citizens. Economic hardship, hunger, psychosocial problems, and law and order concerns will result from the protracted lockdown, which might jeopardize the benefits gauged by the lockdown and COVID-19 containment aims. It increased the health inequities in Indian contexts, reinforcing the vicious cycle of poverty and illness. It's probably time to instill mental health and resilience in schools, communities, and families. To increase the demand for mental health, we need to take a comprehensive approach.^[16]

Furthermore, Matias *et al.* insisted the government should pay attention to the psychological health of health-care staff and patients and self-care should be prioritized in coping with COVID-19's negative impacts and social isolation.^[17]

Mukherjee *et al.* identified fear, rage, guilt, and terror have all been exacerbated by quarantine, leading to a variety of mental illnesses among children and their families. The existence of a supportive family, as well as the lack of financial problems, are stabilizing influences for youngsters.^[18]

During the quarantine, a study on mental health was done among the residents of Sari. According to the data, 21.5% of the individuals reported poor mental health. Anxiety disorder was the most common disorder. Gender, marital status, education, occupation, quarantine period, corona, and exposure to a patient with corona all had a substantial impact on the average mental health score.^[19]

Teleconsultation

Kesavadev *et al.* opined, patients in India are accustomed to visiting hospitals and clinics in person, so accepting medical advice over the phone may be challenging.^[20]

Teleconsultation - scopes and challenges by Banerjee *et al.* pointed out many rural regions even now lack access to the internet, preventing them from using teleconsultation services. Patients may be unable to use cell phones on their own. Patients are frequently hesitant to do self-monitoring of blood glucose at home, making it difficult for doctors to provide helpful guidance. The tiniest communication blunder even may have disastrous effects. Before responding to a patient's inquiries, doctors should often double-check current drugs and dosages utilizing images of prescription blister packs. Many legal issues surround teleconsultation, including obtaining explicit patient consent, maintaining patient confidentiality, recommending medications without

an appropriate diagnosis/provisional diagnosis, and prescribing medicines that the government bans.^[21]

Rathi *et al.* stated the current pandemic of COVID-19 affected SLE patients enormously. Difficulties in medicines availability, a lack of doses of medicines, particularly hydroxychloroquines, financial constraints and more health spending during the pandemic were experienced.^[22]

Educational system

The COVID-19 epidemic has provided the higher education system with the ambition to be bold, creative, inventive, and adaptable in tackling the existing issues. As a result, graduations, convocations, courses, tests, and research programs have all been cancelled or postponed, throwing the academic calendar of institutions into disarray. First time in the world's history and educational disruption of this magnitude has occurred, with long-term consequences for the educational system.

Jena opined during COVID-19, the educational establishments depend mainly on the use of online platforms which was very difficult for computer analphabet students to manage. Financially weaker sections cannot afford to buy the necessary technical equipment for online training or high-speed Internet services. Students missed preadmission advices, admission assistance, face-to-face meetings, not received hard copy of course material, had difficulties with submission of assignments and difficulties in conducting Term-End-Examination. Since the majority of practical courses cannot be conducted online, virtual laboratories are provided with practical classes by the educational institutions.^[23]

According to Gupta and Jawanda COVID-19 has had an unfair impact on quality training, insufficient learning, lack of digital access, decline in educational outputs, wide learning gaps between the low and high socioeconomic groups, a delay in exams, a tardy start of new training and anxiety and frustration in the students' future. Students have been separated from schools, losing enthusiasm and competing interests.^[11]

Status of migrants

Irudaya Rajan *et al.* analyzed the migrants mobility and crisis of mobility. Lack of adequate housing and sanitation facilities for migrants made them even more vulnerable. Migrants' mental health issues must be considered since they are subjected to immense stress, worry, and mental pressure at their destination, even under normal conditions. The COVID-19 issue has highlighted the vulnerability of migrants in times of disaster, emphasizing the importance of prioritizing migrant transportation to and from the source.

Restricting mobility at the start simply delays thorough settlement, as seen by the rise in cases seen in source states that welcomed return migrants after a few weeks. Even if normalcy is restored in the future, the loss of jobs, remittances to their homes, and a reduction in buying power of these employees will result in reduced demand. Cash in employees' hands ensures that they have enough resources to survive any crisis and that some level of consumption is restored in the future.^[24]

Banerjee D and Bhattacharya P stated that due to overcrowding, lack of public hygiene, inadequate waste disposal, weather extremes, contamination, increased prevalence of infections, and substance abuse, homeless people are more vulnerable to a variety of factors, including malnutrition, lowered immunity to infectious agents such as COVID-19, and overall poorer physical and mental health.^[25]

Khanna depicts the lockdowns and social distancing measures, reduced number of jobs and incomes, as it affected farm production, transport systems and supply chains. The lockdown impacts were the most distressing for low-income households which have no alternative incomes and no social security available in the least positioned to face income losses in a recession. Many workers earn little more than a livelihood salary and have no other way of safeguarding their income by losing their jobs. A large part of these vulnerable populations are migrant workers. Due to lockdown and recession, millions of migrant workers, left unemployed in India.^[26]

Dreze disagree that the pandemic's characteristic of reverse migration would affect various states in different ways. Local employees in well-off states, for example, may profit from reverse migration in the form of greater job prospects.^[27]

Economic recession

Gunaseelan and Kesavan analyzed the effects on the economy from the COVID-19 pandemic were estimated at – 2.8% loss of GDP (Gross domestic product) by 2020 with forecasts of 10%–15% in many nations. It is also estimated that a particular decline in service-oriented economies and have jobs are at risk. Foreign trade, tourism business, supply chains are also will face the crisis. According to the findings, every additional month of crisis costs 2.5%–3% of global GDP on average. Lockdown and fear of the spread of infection made small-scale industries and businesses, daily wagers, and local vendors affected negatively.^[28]

Kawohl and Nordt expressed in an article that apart from economic decline, a press release of the International Labour Organization in the 3rd week of March 2020 reports that a job loss of 24.7 million and 5.3 million

in high and low scenarios, respectively, which in turn increased the suicide rates.^[29]

Kannan revealed with travel restrictions in place for more than 80 countries, a considerable percentage of significant carriers' journeys being halted, and lockdowns in place in India till March 31, 2020, the Indian domestic and international travel and tourism industries are anticipated to suffer a significant setback in 2020. The Indian tourism industry is anticipated to earn Rs. 69,400 crore in H1 2020, a y-o-y (year-over-year) loss of over 30%.^[30]

Waste management system

Vanapalli *et al.* denoted fear of infection has influenced human behavior, such as the use of personal protective equipment, an increase in the demand for plastic-packaged food and commodities, and the use of disposable utensils in a hyper-hygienic lifestyle. The inadequacies and inefficiencies of our current waste management system in coping with our rising reliance on plastic may increase its mismanagement and leakage into the environment, resulting in a new environmental calamity.^[31]

Coronavirus disease-2019 pandemic: Opportunities Educational system

Muthuprasad *et al.* conducted an online survey of 307 agricultural students' attitudes and preferences regarding online learning revealed majority of responders (70%) were prepared to take online programs to learn new skills the curriculum throughout the pandemic. The majority of students used their advanced version cellphones, and content analysis revealed that students prefer recorded lectures with a quiz at the end of each session to improve learning efficacy. Students find online programs intriguing because of their flexibility and ease, although many have encountered problems with broadband access. However, because many agricultural courses are practical, a complete transfer to online mode may not be feasible, forcing the establishment of a hybrid approach.^[32]

Jena opinioned due to the obvious COVID-19 pandemic, students become more interested in learning via open and distance learning. It also has a significant impact on open education resources COVID-19 opened the pandemic door for online learning through gadgets and live video conferencing. Mobile learning and digital alphabetization is also improved for educators and students. E-mails, SMS, phone calls and different social media like WhatsApp or Facebook are the solution in most admission related inquiries. Students explore the use of soft copies of the study material, use web storage, great opportunities for global exposure, and get the chance to interact with peers from across the world.^[23]

Telecommunication

Chatterjee *et al.* connotes the COVID-19 epidemic necessitated the implementation of official telemedicine services. The Medical Council of India has issued telemedicine guidelines to encourage doctors to begin offering these services. There are several concerns about medicine prescriptions and about whether people from remote areas will be able to interact with the new service delivery model. Private psychiatric outpatient departments have nearly totally shut down after lockout and the suspension of nonessential services. The Government's outpatient clinics have resumed, although just a few people have shown up. Under the aegis of the Indian Psychiatric Society's regional sections, free telephone consultation/counseling services lead by mental health experts have been created in several states. The majority of private psychiatrists have been extremely accommodating with their patients, seeking to help them resolve difficulties.^[33]

Rathi *et al.* stated during the current pandemic of COVID-19 SLE patients were helped by prompt and frequent telephone consultations, helped in making the medicines available, and ultimately alleviated their anxiety.^[22]

According to Konwar and Borse the Indian health-care system is a unique example of economic restrictions, a varied population, and a wide range of health-care needs. This scenario necessitates distinctive solutions that are inexpensive, accessible, and efficient. Point-of-care (POC) diagnostic instruments meet the specific needs of health-care personnel, patients, and the rural population in this circumstance. Indian researchers are working hard to create novel POC diagnostic gadgets, and the translational potential and commercialization prospects are encouraging. Furthermore, in nations with large populations, POC diagnostic equipment may play a crucial role in containing the COVID-19 pandemic. The development of POC diagnostic equipment must be more customized and data-centric since this would help India's primary health-care system and put it on track to achieve comprehensive universal health coverage.^[34]

Adaptation to the present situation

Wiebers and Feigin expresses it's past time for us to reexamine our relationship with all living things on this planet, including other people, nonhumans, and the environment, which is a living organism in and of itself. Given the fundamental interdependence of all species, what is beneficial for nonhumans and the environment is almost always in the best interests of humans. Everything we do is reliant on a diverse range of plant and animal life, as well as clean air and water. By demonstrating and encouraging enhanced awareness of these fundamentals each one of us may have a positive

impact, starting mostly by what we eat and how all our everyday choices and actions affect animals and natural habitats. In the end, the survival not only of other forms of living on this planet, but also of ourselves, depends on the ability of humanity to recognize the uniqueness of everything and the importance and deeper significance of compassion for every life.^[35]

Karunathilake identified a rise in low-cost domestic manufacturing led to the adoption of conventional diets, consumption, and lifestyles. The use of fewer plastics in stores and homes decreased emissions. A decrease in risky habits such as drug and alcohol abuse, drinking, commercial sex, and crime.^[36]

Coronavirus disease-2019 pandemic: Benefits

Family bond

Thavarajah *et al.* concluded that there is a greater demonstration of patience when family members become closer. A new instrument for dentists called the "home containment (HC) mediated family improvement index." was used to assess family bonding. The bonding score rises as the number of children grows from zero to one to two, emphasizing the importance of children in family bonding. Older responses indicated that as they become older, they become more adaptable. Similarly, married persons get greater ratings than unmarried people, indicating that respondents have altered or quickly adapt to situations better than unmarried people throughout HC. When responders have children, they have been able to accommodate them more throughout their confinement at home.^[37]

Gupta and Jawanda states taking time with their families may help children build closer ties, and be aware of the impact of the pandemic may also help children develop more humanity and empathy, as they understand the value of human life.^[11]

People learned how to live a healthier lifestyle, control their diet, adjust their sleep schedules, work out and keep their bodies fit at home. As per Chopra *et al.* web-based survey a questionnaire on changes in lifestyle-related behavior throughout India. A total of 995 replies (58.5% male, average age 33.3 years) revealed an increase in healthy meal consumption patterns and a limitation of harmful food items, particularly among the younger population (age 30 years).^[10]

Hand hygiene

Moore *et al.* three impacts appeared in the study on hand hygiene performance in hospitals, all of which were significant at $P > 0.001$. In the months leading up to pandemic-related school closures, average hand hygiene performance (HHP) rates increased from 46% to 56%. There was a 6% rise during the school closing period.

HHP rates remained over 60% for 4 weeks before falling to 54% at the end of the study.^[38]

According to Modi *et al.* findings, a higher proportion of the correct reactions were provided by undergraduate doctors and a lower proportion was received from nonclinical/managers on hygiene. This study shows that regular educational interventions and training programs on COVID-19 infection control practices in all health-care professions are needed. Periodic educational webinars could be useful and safe tools for raising awareness for all health students and health professionals, including nonclinical and administrative staff.^[39]

Bagepally *et al.* conclude that hand hygiene was cost-effective and resource savings can be achieved among the nonpharmacological interventions considered to prevent the spread of the COVID-19. Therefore, at all levels, they recommend that the authorities actively promote hand hygiene practices at a population level.^[40]

Impact on water sources

Water tests collected from several places along the Ganga's upper, middle, and lower reaches revealed in an article by Balamurugan *et al.* shows a significant increase in water quality, attributable mostly to the shutdown of big industrial and agricultural activities.^[41]

In a report by Dutta *et al.* reveals that in just 2 months of lockdown, dissolved oxygen levels have improved, biological oxygen demand has decreased, and nitrate concentrations have decreased in the Ganga, leading in an overall improvement in water quality. It was also revealed that 60% greater rainfall contributed to an increase in discharge, resulting in enhanced river flow volume, compared to prior years.^[42]

Internet usage

Many improvements are seen in the online medical industry and telemedicine within a few months; however, it lacks the human touch. People's acceptance of the concept of telemedicine also evolved during the lockdown.

To combat the COVID-19 epidemic, the internet of things (IoT) provides an extensive, integrated network for health care. With well-connected tele-devices, infected cases may be managed correctly in a remote location. It intelligently manages all cases to give better health care to patients and screen contaminated patients. IoT becomes helpful in predicting a future scenario of this sickness by employing a statistical-based strategy. Singh *et al.* concluded that researchers, physicians, the Government, and academicians can build a better atmosphere to battle this disease if this technology is used correctly.^[43]

E-learning

Rana *et al.* stressed the importance of inventive reviews that business schools could take into consideration when a pandemic occurs. The emphasis is on recognizing the imperatives, establishing a critical guide for meeting immediate requirements, judiciously allocating assets to update educational course curricula and teaching techniques, and building the appropriate academic infrastructure. B-schools will have a fresh lease of life in the future if they focus on developing an e-learning framework and providing a safe and secure learning environment for students in accordance with regulatory regulations.^[44]

The validity and reliability of a Persian questionnaire devised to assess cardiology residents' satisfaction with virtual learning during the COVID-19 outbreak were confirmed by Ghadrdoost findings. Validated surveys based on medical residents' feedback on virtual education can assist educators in selecting the most effective medical teaching methods, particularly during the coronavirus outbreak. The questionnaire, according to the authors, can help health officials and planners build comprehensive, yet easily accessible teaching programs.^[45]

Gupta and Jawanda states the positive impact for children during COVID-19 were acquiring new education skills, engage in indoor activities, develop personality, build self-confidence.^[11]

Conservation of the environment

The most important part of this pandemic is that it allows Mother Earth to rest; less traffic resulted in fewer injuries/trauma victims and less CO₂ emissions and fossil fuel usage, which aided in the revitalization of natural vegetation.

According to Parida *et al.* study findings, India's daily fossil-based CO₂ emissions had fallen by -11.6% (-5%--25.7%) by mid-June 2020, with a total change in fossil-based CO₂ emissions of -139 (-62 - 230) MtCO₂, with the most significant reductions in industry (-41%), transportation (-28.5%), and power (-21%), followed by agriculture (-21%), and aviation (-4%).^[46]

Kalawapudi *et al.* expressed majority of celebrations end up causing noise pollution through rituals and festivities. Noise levels were measured at 73.7 dBA (decibels A), 69.6 dBA, and 68.8 dBA in 2020 in Dadar, Ganesh Gully, and Girgaum, respectively, indicating a substantial drop over the previous 2 years. The noise level of noise pollution level (LNP) is 88 dBA, which is considered reasonable. During the Ganesh festival in 2020, the LNP was discovered to be extremely low. All three locations considerably reduced background noise L90 (sound level

exceeded for 90% of the time of the measurement period) and peak noise between 2018 and 2020 (L10). In comparison to 2018, noise levels (Leq-[equivalent continuous sound level]) at Dadar, Ganesh Gully, and Girgaum were lowered by 28.5, 28.2, and 27.5 dBA in 2020.^[47]

Jain and Sharma identified that except O₃, all other pollutants showed a statistically significant decrease in all Indian megacities between March and April 2019 and March and April 2020, between the 10th and 20th of March (before the lockdown) and the 25th and 6th of March April 2020 (during the lockdown).^[48]

Another study by Venter *et al.* reported 60% decline in ground-level nitrogen dioxide (48%–72% at 95% confidence interval [CI]) and a noticeable improvement in ozone layers (O₃: 4%; 95% CI: –2%–10%). The usage of plastics and the production of other waste products also changed during the pandemic period.^[49]

Muhammad *et al.* compiled report of National Aeronautics and Space Administration, and European Space Agency shows that the lockdown forced to cancel all travel routes reduced 90% of mobility and 30% environmental pollution.^[50]

Discussion

As the preceding assessments demonstrate, the pandemic had an impact on not just human existence but also on all of the earth's systems. Despite the limited advantages, the obstacles posed by the COVID 19 surpass them all. Different measures have been taken to prevent and control the covid-19 pandemic outbreak, and it also has its own positive and adverse influences on the health status of the people. In brief, COVID-19 has accelerated influential trends for the future.

Limitations and recommendation

Even though all potential published publications were searched using only two data sources, it's possible that any important research was missed. Due to a lack of resources, only English-language publications were examined.

Conclusion

In the middle of the ongoing COVID-19 epidemic, India has seen a significant increase in covid-19 and high positive cases in recent months. Although the COVID-19 epidemic has had a detrimental influence on India's health system, economy, and social life, it has brought many good opportunities also. Benefits are witnessed in lifestyle, educational system, introduction of telemedicine and technological transformation. It

also improved reading culture and family bonding and discussion time. Thus, as part of preventing and controlling the COVID-19 pandemic outbreak, the opportunities, benefits emerging with this global crisis should be well recognized and happily enjoyed without ignoring the measures against COVID-19. It can reduce other health issues, which may occur due to COVID-19, and facilitate the control of the pandemic itself.

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Conflicts of interest

There are no conflicts of interest.

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