A Biannual Refereed Journal

2020 Volume 19 Number 2 July-Dec.

ISSN 0972-706X

MAHARSHI DAYANAND UNIVERSITY RESEARCH JOURNAL ARTS

Special Issue on COVID-19

ICI Indexed

Loveleen

Editor-in-Chief

Annual Subscription : Rs. 1000/-

Subscription should be sent to the Editor-in-Chief, Maharshi Dayanand University Research Journal ARTS in the form of Bank Draft in the name of Finance Officer, Maharshi Dayanand University, Rohtak payable at Rohtak.

Available at : Office of the Editor-in-Chief
MDU Research Journal ARTS
Swaraj Sadan
Maharshi Dayanand University
Rohtak-124001
mdurj@mdurohtak.ac.in

Editorial

Life, Shakespeare says, is a stage where we come and play scripted roles. The last few months seem to have proved that the time span of our playacting is also unsure, as to how long we shall play a particular role. The pandemic, besides being a health and medical emergency, has been an existentialist crisis too. An invisible, untraceable and incurable adversary challenged the entire humanity. It has been a arduous time for all, a nemesis of sorts, with humanity paying for its acts of omission and commission. The pandemic has been a great leveller, neither sparing nor condoning any one. The mightiest of nations were in dire straits with swelling numbers of the sick and the dead. There has not been any facet of human life unscathed by Covid-19. Life itself has been transformed, the old hustle and bustle being reduced to a studied silence and gradual recovery. Yes, there have been fighters even amidst the most frightening of times- Doctors, paramedics, scientists, researchers, police personnel, sanitation workers, teachers, social workers and NGOs as well as religious and philanthropic organisations. All have supplemented and complemented the efforts of the Government. Education has been one of the primary sectors to take a blow. Although our policy makers and planners, by shifting to the digital mode quickly, ensured that teaching and learning does not suffer, there have been some stumbling blocks as well, owing to infrastructural, technical, social and economic factors. The present Volume of the MDU Research Journal (Arts) is a homage paid by the University to all those who gave up/lost precious lives in the line of duty. Best wishes to those who have overcome the pandemic.

The M.D.U. Research Journal (Arts) Vol.19 No.2 July- Dec. 2020 dedicates seven research articles to varied perspectives on Covid-19, consisting of invited papers on the pandemic from the prismatic view of contributors from the field of academics, social work, science, media and pharmacy. These are responses and observations of individuals with expertise in their respective domains. The Journal acknowledges their contribution. Maharishi Dayanand University, Rohtak has been the first institution of higher learning in the region not only to adopt online teaching very smoothly and efficiently, but also to prove how challenges can be converted into an opportunity. An exemplary leadership was provided by the Vice Chancellor, Prof Rajbir Singh, also the patron of the Journal, which not only ensured flawless online academic activities but also a hygienic, secure and reassuring environment on campus for the residents. Official work was rarely hampered nor was teaching discontinued at any point of time. Examination were held and admissions were made online with minor glitches here and there. Every stake holder was personally approached to enquire about their well-being. In order to provide psychological counselling, provision was made for online assistance to students for good mental health. Even the foreign students were well taken care of. The University extended a helping hand to nearby villages by deputing teachers on Covid- 19 duty even when the pandemic was at its

peak. The student community also came out in good numbers to contribute in social outreach initiatives. But for the physical absence of colourful and vibrant young students, co-curricular activities have been going on through online competitions, discussions and interactions. The University Placement Cell has kept the students duly informed about available opportunities. The University Yagyashala provided spiritual support by playing soothing mantras and shlokas on a daily basis early morning. In order to strengthen the efforts of the state Government, a Covid-19 care centre is also operational on the Campus with proper availability of medical personnel, equipment and other allied facilities. The University has been successfully running the vaccination drive for all employees, their families and also for the retired teachers and their families.

With the University taking strides in all positive directions for more than one and a half year in the wake of Covid 19, the pandemic itself has given us time to reflect and introspect. The empty roads, unoccupied lecture theatres, barren canteens gave an eerie sight. As an intellectual community, we all need to ponder over the direction humanity has been moving in. Students are supposed to participate actively in campus life. Lectures ought to be animated by precocious interaction. Life needs to be reclaimed. As the proverbial adage says that every cloud has a silver lining, hence despite the regimen for physical distancing, we have grown stronger and closer in our concerted fight against this global health challenge.

The authoritative Intergovernmental Panel on Climate Change (IPCC) report, which calls climate change clearly human-caused and "unequivocal," has made a forecast of a warmer 21st century than it did the last time in 2013.According to another report released on August 9, 2021, the United Nations calls it a "code red for humanity", a situation with "Nowhere to run, nowhere to hide." We live precariously perched in a universe inherited as a legacy to be passed on to the posterity. Humanity has not been conscientious and responsible enough in utilizing the resources it was bequeathed with. In the light of the crisis we have been facing collectively, a few questions often flash in the mind's eye. Where do we seek succour and sustenance? Do literature and arts make any difference? Do they answer any of the existentialist questions which life throws at us? Have Humanities and Social Sciences been our anchors when science and technology appeared helpless and redundant? One is reminded of some beautiful lines by W.H.Auden:

For poetry makes nothing happen: it survives

In the valley of its making where executives

Would never want to tamper, flows on south

From ranches of isolation and the busy griefs,

Raw towns that we believe and die in; it survives,

A way of happening, a mouth. ("In Memory of W.B. Yeats")

It's not science and technology that annihilated the green cover, created huge imbalance in the natural ecosystem, and brought floods, famine, disease and extreme weather conditions. The enemy is within. It's our acquisitive tendencies going berserk which should be reined in. We need to cherish culture, civilizational values, ethics and altruism in order to restore equilibrium in humanity and Nature. Humanities nurture that sensitive and finer side of our persona where hope and affirmation reside. It upholds the beacon light which inspires never to give up.

Hope we have learnt a lesson of co-extensive/ symbiotic and harmonious living with Nature.

It's Your Earth

It's your earth.

Will you neglect it,

Or nurture it?

Will you tend it,

Or squander it away?

The choice is yours,

But if you're going

To make a stand,

You'd better start today.

(Kelly Roper)

More power to learning, growing and evolving.

Editor-in- Chief

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2), July-Dec.
ISSN 0972-706X

CONTENTS

Article

Rethinking Future of the Environmental Education in India

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.1-12
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Rajendrakumar Anayath
Vice Chancellor, Deenbandhu Chhotu Ram University of Science and Technology, Murthal

Chitrarekha Kabre
Director, Internal Quality Assurance Cell, Professor, Deenbandhu Chhotu Ram University of Science and Technology, Murthal

Abstract

The twenty-first century which began with great enthusiasm was soon followed by a spate of catastrophic events like 9/11, the Fukushima Daiichi nuclear disaster of 22 March 2011 and numerous natural disasters, and more recently once-in-a-century event, the pandemic COVID-19; which has led to deep environmental, social, cultural and economic deformations on a global scale with far-reaching consequences for the future existence of humanity.

Various research studies insinuate that anthropogenic environmental impacts caused by human activities, such as overpopulation, pollution, change of land use, loss of biodiversity, and burning of fossil fuels, are some of the reasons behind zoonotic diseases like COVID-19. Therefore, the international community is urging the nations to rethink and restructure their environmental education, governance, and policy frameworks. This paper argues for rethinking the future of Environmental Education in Indian higher educational institutions and recommends integrating Environmental Education holistically in higher education and examine how it does (or does not) relate to our everyday practice.

Keywords: Higher Education, Environmental Education, Knowledge, Skills and Responsibility.

Corresponding author:
Col Comdt Prof. (Dr) Rajendrakumar Anayath, Vice Chancellor, Deenbandhu Chhotu Ram University of Science and Technology, Murthal

> A fundamental change is needed in the way we think about education's role in global development because it has a catalytic impact on the well-being of individuals and the future of our planet. … Now, more than ever, education has a responsibility to be in gear with 21st century challenges and aspirations, and foster the right types of values and skills that will lead to sustainable and inclusive growth, and peaceful living together.
>
> UNESCO Director General, Irina Bokova
>
> "Education can, and must, contribute to a new vision of sustainable global development." (UNESCO 2015).

''ॐ द्यौः शान्तिरन्तरिक्षँ शान्तिः, पृथ्वी शान्तिरापः शान्तिरोषधयः शान्तिः।
वनस्पतयः शान्तिर्विश्वे देवाः शान्तिर्ब्रह्म शान्तिः, सर्वं शान्तिः, शान्तिरेव शान्तिः, सा मा शान्तिरेधि।।
ॐ शान्तिः शान्तिः शान्तिः।।''

Meaning:

> "May peace radiate there in the whole sky as well as in the vast ethereal space everywhere.
>
> May peace reign all over this earth, in water, and all herbs, trees, and creepers.
>
> May peace flow over the whole universe.
>
> May peace be in the Supreme Being Brahman.
>
> And may there always exist in all peace and peace alone.
>
> Om Shanti, Shanti, Shanti to us and all beings!"

Higher Education in India

The word "Education" can be defined as "The knowledge, skill, and understanding that you get from attending a school, college, or university" (Merriam-Webster's Learner's Dictionary) and "The process of receiving or giving systematic instruction, especially at a school or university" (Oxford dictionary).

India is known for its rich cultural heritage and eternal knowledge of antiquity. The quest for knowledge (*Jnan*), wisdom (*Pragyaa*), and truth (*Satya*) were essentially thought of as the highest human goal in Indian thought and philosophy. In ancient India, education aimed to acquire knowledge to prepare for life beyond institution or life in this world and profound realization and complete liberation of self.

John Dewey, the modern father of experiential Education, stated, "human experiences- past, present, and future- influence the capacity to learn. Education is a social process. Education is growth. Education is not a preparation for life; Education is life itself." The present higher education system in India, particularly in the post-independence period, has

grown significantly to turn into the third-largest system globally, after China and the United States.

The functions of the Government of India for the operational delivery of the education system are laid down in the Constitution of India, Article 77 Clause (3) of the ("Conduct of Business of the Government of India"). The Ministry of Human Resource Development, later renamed as Ministry of Education, was instituted on 26th September 1985 by the 174th amendment to the Allocation of Business Rules, 1961 of Government of India. The Ministry of Education formulates policies for the effective functioning of the educational institutes and the execution and review of these policies and planning guidelines.

The quality of education is the constitutional obligation of the Government of India as laid down in the entry 66 of the Union list, "the coordination and determination of standards in institutions for higher education or research or scientific and technical institutions." The Government of India supports higher education through an institutional governing system, funding bodies, and regulatory charters and bodies.

Regulatory bodies include the All India Council for Technical Education (AICTE), the Council of Architecture (CoA) and the University Grants Commission (UGC). The Directorate of Technical Education (DTE) monitors State-funded and self-financed higher educational institutes in the states. Two prominent accrediting institutions regulate the higher education institutions: the National Assessment and Accreditation Council (NAAC) created by UGC and the National Board of Accreditation (NBA) created by AICTE.

The Indian education system has been framed with National Education Policy in 1964, 1968, 1986, and finally 2020. A fundamental shift may be observed in the aims of the National Education Policy of India from that of the socialist thrust of National Education Policy 1986 to the universalization of National Education Policy 2020.

The National Knowledge Commission (NKC) created by the Government of India in June 2005 proposed a comprehensive roadmap for the future of Education by concentrating on the five dimensions of knowledge paradigm: augmenting *access* to knowledge, rejuvenating institutions where knowledge *concepts* are disseminated, promoting a state-of-the-art atmosphere for the *creation* of knowledge, fostering *applications* of knowledge for inclusive and sustainable growth, and efficiently utilizing knowledge in the rendering public *services* (GOI 2009). The NKC recommendations on higher education concentrated on the three key areas of excellence, inclusion, and expansion. The NKC has suggested reforming existing universities to ensure the start of the course credit system, promoting reliance on internal assessment, regular curriculum revisions, fostering research, and improving the governance of institutions.

The National Skill Quality Framework (NSQF) of the Government of India was adopted in 2013 to provide a quality assurance framework to connect qualification systems and act as a "translation device to make qualifications more readable and understandable across different countries and systems in India" (GOI 2013). The NSQF organizes qualifications through a series of levels of knowledge, skills, and aptitude. These competency levels are articulated in terms of learning outcomes which the learner must acquire through formal or informal learning. The full scale of qualifications following a series of competency levels of aptitude, skills, and knowledge. The learning is structured in 10 levels cut across the full scale of qualifications (where levels 7, 8, 9, and 10 connect to the four cycles of higher Education- primarily an undergraduate degree, postgraduate degree, postgraduate diploma, and Ph. D.). It describes the learning outcomes in terms of Process, Professional knowledge, Professional skills, core skills and responsibility (GOI 2013).

The choice-based credit system (CBCS) was implemented by the University Grants Commission (UGC) and the All India Council of Technical Education (AICTE) across undergraduate and postgraduate programs. It's a new interdisciplinary education model that integrates technology, humanities, design, and entrepreneurship and attempts radical pedagogical experiments and blended learning. Thus, India's present-day education system has moved towards blended learning involving theoretical and praxis-based knowledge, thus reverberating the glorious past of Takshila and Nalanda, ancient universities of India.

National Education Policy 2020 envisages an India-centric education system that aims to transform our country into a sustainable and inclusive knowledge society by offering high-quality education to all. The Government of India has attributed high priority to Education as one of the most significant ways of attaining the nation's development goals and has revealed its commitment by earmarking increased funding for Education.

Need for Environmental Education

Primitive man, with his limited requirement, lived in harmony with nature. However, with his unlimited requirements, the modern age man has caused harm to the environment and deformed the harmony with nature. Environmental deterioration was the highlight of the UNEP conference in Stockholm in 1972. Barbara Ward and Rene Dubos (1972) well summarized the situation in the book *Only one earth*. The OPEC oil embargo in the following year made the world realize that fossil fuel supplies are finite. The three main challenges were:

i. Population explosion

ii. Resource depletion

iii. Environmental degradation

The Constitution of India proclaimed the environmental policy in (forty-second amendment) Act (GOI 1976):

> "48A.Protection and improvement of environment and safeguarding of forests and wildlife. The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country."
>
> "51A. Fundamental duties-It shall be the duty of every citizen of India: (g) to protect and improve the natural environment including forests, lakes, rivers, and wildlife, and to have compassion for living creatures."

The Government of India proclaimed a National Policy on Education in 1986. While recognizing the need for introducing environment education at all educational levels, it highlights that "there is a paramount need to create an environmental consciousness. It must permeate all the ages and all sections of the society."

The Brundtland Report (WCED 1987) initiated the conception of "Sustainable development" and defined it as:

> "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The latter aspect has been termed as 'inter-generational equity'. Sustainable development weaves together three issues: protecting the environment, social development, and economic development, Figure 1.

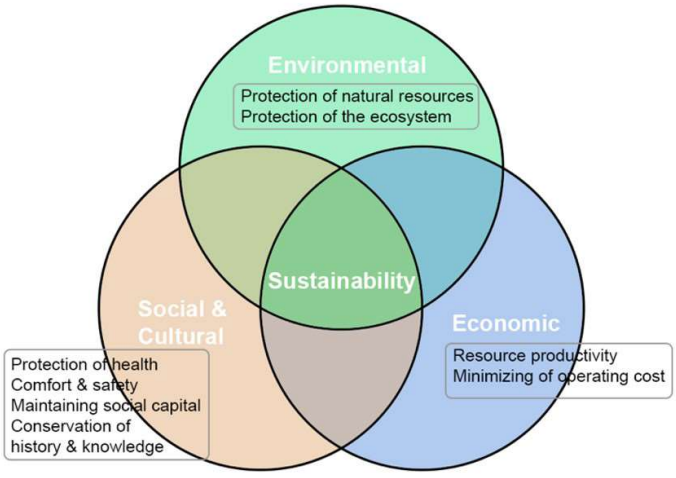

Figure 1: Sustainable development

The Montreal protocol in 1987 approved the phasing out of organic fluorides, disturbing the ozone layer and allowing more UV radiation (while also causing the greenhouse effect).

The Intergovernmental Panel on Climate Change (IPCC 1990) reported that it is well recognized that the climate is changing; this is generally anthropogenic, caused by the greenhouse gas emissions due to human activities.

Environmental Education (EE) has become one of the significant concerns globally since the 'Earth Summit' United Nations Conference on Environment and Development at Rio (UNSD 1992). In Agenda 21 (section IV, Means of Implementation, chapter 36A) Reorienting Education towards sustainable development, it is emphasized:

> "36.3. Education, including formal education, public awareness, and training, should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues," (UN 1992).

World Summit on Sustainable Development at Johannesburg in 2002 has further caught the world's attention to the degrading conditions of the environment and underpinned the need for environmental education.

As per the direction of the Hon'ble Supreme Court in 2003, the University Grants Commission (UGC) introduced one-semester mandatory Environmental Studies (EVS) course in all undergraduate courses in India (UGC 2004).

The G8 University Summit at Japan held in 2008, made a declaration:

> "The role of higher education for sustainability:
>
> Universities have a critical role to play in educating future generations, disseminating information about sustainability, and particularly by training leaders with the skills to solve regional and local problems from a global and interdisciplinary perspective. Especially crucial is the fostering of human resources to work toward sustainability in the developing nations that bear the brunt of global environmental problems. A network of networks can also provide opportunities for collaborating universities to develop and improve higher education capacity in their respective nations and regions."

The United Nations Conference on Sustainable Development was held at Rio de Janeiro, Brazil on 20-22 June 2012; the Agenda item 19-Sustainable Development, The Future we want, Framework for action and follow-up, thematic areas, and cross-sectoral issues, declares (UN 2012):

> "We recognize that the younger generations are the custodians of the future and the need for better quality and access to Education beyond the primary level. We, therefore, resolve to improve the capacity of our education systems to prepare

> people to pursue sustainable development, including through enhanced teacher training, the development of sustainability curricula, the development of training programmes that prepare students for careers in fields related to sustainability, and more effective use of information and communications technologies to enhance learning outcomes. We call for enhanced cooperation among schools, communities, and authorities in efforts to promote access to quality education at all levels."

The United Nations Summit held in Paris in September 2015 approved the landmark 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) that span across disciplines, sectors, and institutional mandates, acknowledging the interconnected nature of the several challenges that humanity faces and will globally apply to all, over the ensuing fifteen years. Quality education is an explicit goal - Sustainable Development Goal 4; strives to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." Further, Education for Sustainable Development (ESD) is well known as fraction of Target 4.7 of the SDG4, jointly with Global Citizenship Education (GCED), which UNESCO (2015) fosters as a complementary strategy.

> "By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development."
>
> United Nations, 2015

ESD led the United Nations Decade of Education for Sustainable Development (DESD) from 2005 to 2014, which targeted at incorporating the values, principles and practices of sustainable development into all facets of learning and education. The Global Action Programme (GAP) on ESD, from 2015 to 2019, targeted to create and scale up ESD and expedite advancement towards sustainable development.

The report titled *'Education for people and planet'* by the United Nations Educational, Scientific and Cultural Organization (UNESCO 2016) stated as under:

> "Education can play a major part in the required transformation into more environmentally sustainable societies, in concert with initiatives from government, civil society and the private sector," which thrust for Education as one of the means for addressing the environmental catastrophe caused by human activities. The report stated, "Education shapes values and perspectives. It also contributes to the development of skills, concepts, and tools that can be used to reduce or stop unsustainable practices."

Future of Environmental Education

Environmental deformation during the pandemic has enraged many people besides their predicaments. This fight gets further complex due to increasing global ecological change. Axiomatically, to prevent future pandemics, we need to rethink the extant environmental education, governance, and policy frameworks in India. Education is one of the essential strategies for environmental, social, and economic transformations. Higher Education needs to become interdisciplinary and foster systems thinking. This involves understanding the interconnectedness of ecological, economic, and social systems and developing strategies to address their challenges as a whole. It needs to be recognized that environmental Education could be vital in addressing pervasive changes that precipitated the pandemic in the first place.

United States Environmental Protection Agency defines: "Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions." The components of environmental education (figure 2) foster holistic thinking and enhance problem-solving and decision-making skills of individuals.

Figure 2: Components of Environmental Education (EPA)

The scope and content of environmental Education need to go beyond one particular compulsory course of 'Environmental Studies (EVS).' Environmental Education needs to be considered a process to promote environmental awareness and understand its relationship

with humans and their activities. Environment education is education *about* the environment, *from* the environment, and *for* the environment.

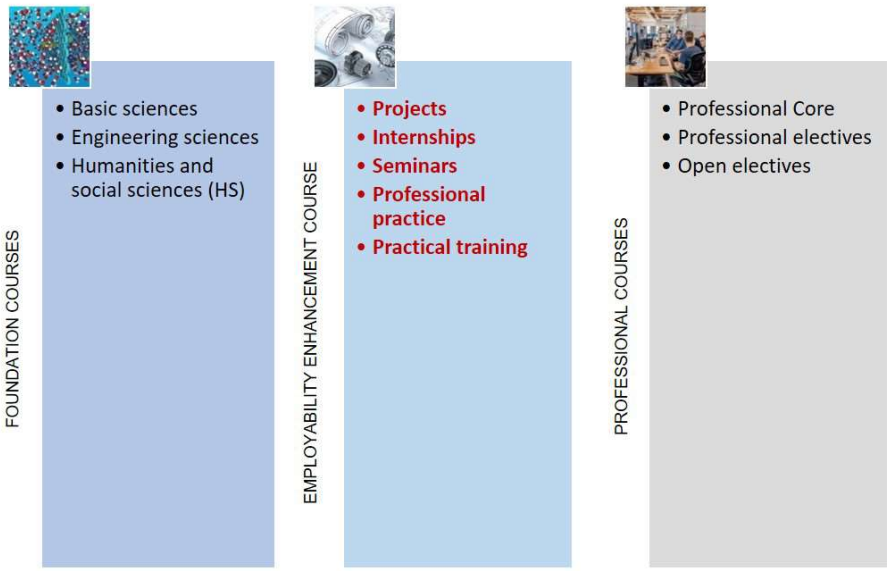

Figure 3: Categorization of course in Choice-based Credit System

The current syllabi in higher educational institutions needs to be revamped to accommodate current environmental issues, narratives, and perspectives and foster critical thinking, Figure 3. For example, knowing the state of the art in material science is not enough; students must also comprehend the life cycle impact of the materials. Similarly, knowing that climate change is real is not enough; students must recognize that it will have severe consequences for over half a billion people in this country. More importantly, students must develop strategies to resolve it.

Tilbury, Keogh, Leighton & Kent (2005) argues that the development of sustainability curricular in universities needs to be accompanied by a process of "institutional strengthening and professional development in order for their principles to be translated into practice." Students should also be exposed to fieldwork and presented with opportunities to develop skills to handle local environmental crises. A holistic approach to environmental education is key - whereby educated students will carry forward environmental decision-making in their respective professional practice and become lifelong learners.

Sterbuleac and Toma (2018) discussed limitations of curriculum based environmental education and describes a unique concept of eco-consortium involving students, teachers, and specialists from different educational levels and expertise, to impart environmental education.

Conclusions

India has a young population, and consequently, there has been a massive increase in the demand for quality higher education, especially in the 21st century. It is well established that Environmental Education enriches students to make enlightened choices and accountable measures for environmental sustainability, economic feasibility, and equitable society for present and future generations.

Traditional knowledge has been experiential and experimental, validated over time. Since it is intertwined with the environment, it is adversely affecting the environment is highly remote. However, the modern education system entails formal lessons in environmental education. Integrating Environmental Education across the curriculum is an opportunity to respond sincerely to the environmental challenges of our day, especially post-pandemic. Nevertheless, formal lessons are one way of understanding the environment; emersion in nature is another effective way. The present youth should take pride in their legacy and carry it forward in the realm of the global community. Finally, let us embrace the message of great Indian sage Swami Vivekanand in our quest for environmentally sustainable India:

"Arise, awake, and stop not till the goal is reached."

References

EPA (2020) What is Environemntal Education? United States Environmental Protection Agency, https://www.epa.gov/education/what-environmental-education

GOI (1976) The Constitution (forty-second amendment) Act. http://indiacode.nic.in/coiweb/amend/amend42.htm. Accessed 18 Nov 2016

GOI (2009) National Knowledge Commission, Report to the Nation 2006-2009. https://www.aicte-india.org/downloads/nkc.pdf#toolbar=0

GOI (2013) National Skill Qualification Framework (NSQF), Department of Economic Affairs, Ministry of Finance, Government of India, https://www.education.gov.in/sites/upload_files/mhrd/files/NSQF%20NOTIFICATION.pdf

Sterbuleac, D., & Toma, O. (2018). Applied environmental education & communication environmental education through a University. Applied Environmental Education & Communication, 0(0), 1-12. doi:10.1080/1533015X.2018.1496862

Tilbury, D., Keogh, A., Leighton, A., & Kent, J. (2005). A national review of environmental education and its contribution to sustainability (pp. 1-5). Canberra: Australian Government Department of the Environment and Heritage and Australian Research Institute in Education for Sustainability (ARIES). doi:10.1007/s13398-014-0173-7.2

UGC (2004) Six months compulsory core module course in environmental studies: for undergraduate students. https://ugc.ac.in/oldpdf/modelcurriculum/prepage.pdf

UN (2012) The future we want, Resolution adopted by the General Assembly on 27 July 2012, United Nations. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E

UN (2015) Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015. https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

UNEP (2015) Sustainable Development Goals. https://www.unep.org/about-un-environment/evaluation-office/our-evaluation-approach/sustainable-development-goals

UNESCO (2015) Global Citizenship Education: Topics and learning objectives. http://unesdoc.unesco.org/images/0023/002329/232993e.pdf

UNESCO (2016) Education for people and planet: creating sustainable futures for all, Global education monitoring report, https://unesdoc.unesco.org/ark:/48223/pf0000245752

UNSD (1992) Agenda 21, United Nations for Sustainable Development, United Nations Conference on Environment & Development, Rio de Janeiro, Brazil, 3 to 14 June, https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf. Accessed 24 Aug 2016

Ward B, Dubos R (1972) Only one earth: the care and maintenance of a small planet. Penguin, Harmondsworth

WCED (1987) Our Common Future. World Commission on Environment and Development, Oxford GB, Oxford University Press, conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf. Accessed 30 Aug 2012.

Article

COVID-19 Vaccines: Significance, Need and Tackling Hesitancy Amongst General Population

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.13-26
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Sanju Nanda
Professor, Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak

Tarif Hussian
Ph.D. Research Scholar, Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak

Chavi Goel
B. Pharmacy, Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak

Abstract

After an era, the world is again facing the outbreak of human to human transmission and severe human infection due to the pandemic that started in Wuhan, China in late 2019. Within 3 months severe virus infections spread in multiple countries at the same time. On 11th March 2020, World Health Organization (WHO) official announced the coronavirus pandemic. Urgent and aggressive actions were taken by different governments for the protection of citizens such as the toughest lockdown in India, the USA and European nations. Non-essential activities closed except sessional services such as food shops and pharmacies. Strict actions to control the spread of the coronavirus pandemic were not a permanent solution. For common people, unexpected lockdown with unpredictable strictness has impacted the social, psychological and economic life. With the cooperation of private agencies and support of government regulatory administration in pharmaceutical companies began work on safe and effective vaccine development. Now worldwide more than dozens of COVID-19 vaccines are authorized and many more are under development. History has witnessed, humans have successfully developed numerous vaccines against lethal diseases by scientific approaches. Vaccination is widely recognized as one of the most effective preventive measures in public health. This article summarizes the significance of COVID -19 Vaccination.

Keywords: COVID-19, Vaccine hesitancy, Vaccination, Co-WIN, India.

Corresponding author:
Sanju Nanda, Professor, Department of Pharmaceutical Sciences, Maharshi Dhayanand University, Rohtak
Email: sn_mdu@rediffmail.com

Introduction

The world was running normally before 11th March 2020 until WHO declared the spread of COVID-19 as a pandemic. COVID-19 is a disease caused by a new coronavirus called SARS-CoV-2 (Cheng et al., 2020). The human body has various ways of combating disease-causing organisms (Pathogens). The human body produces natural response against pathogens. But Vaccine gives an extra safety shield to human health and activates immune system without making one seriously sick. Each vaccine undergoes rigorous and extensive testing to ensure its quality, safety and effectiveness before availability to the general population. (Jeyanathan et al., 2020). By extensive scientific approach, researchers have continued to develop vaccines against lethal diseases such as wild poliovirus, tetanus, meningitis, measles and many more. In the past, vaccines have been developed through several stages that can take many years. Vaccines help protect us against disease and feeling mild or moderate side effects after receiving one is a sign that the vaccine immune system is working (Pezzotti et al., 2018).

COVID-19 Vaccine Development

No one is safe from COVID-19 until everyone is safe. In the vaccine development process, scientists and regulatory authorities closely assess vaccine safety, efficacy and potency. In competitive COVID-19 vaccines case, researchers have discovered vaccines for COVID-19 disease within short periods with the alliance of drug regulators the vaccine goes through several developmental stages before being given to people without compromising on quality, safety and efficacy protocols (Shah et al., 2020) as shown in figure number 1. Some important COVID-19 vaccine developmental stages are exploratory research, pre-clinical testing (laboratory and animal studies), Clinical development (human trials), regulatory assessment and approval, manufacturing and quality control.

Different types of vaccines work in different ways to offer protection. Vaccination exposes the body to these antigens (Lipsitch & Dean, 2020). Vaccine safety monitoring is ensured at the national, regional and global levels. Each vaccine formulation consists the several tested ingredients with specific purpose. Some important ones have been (Wang et al., 2020) enlisted in table number1:

Vaccines are usually tested in adults first. All approved COVID-19 vaccines have been thoroughly tested and all provide a high degree of protection against getting seriously ill and dying from the disease (Fauci, 2021). Nowadays several vaccines are available in markets which have been enlisted below in table number 2.

COVID-19 vaccines are safe and effective. But COVID-19 vaccines are not interchangeable. An individual need to take two shots of same brand vaccine within a

specific duration/ interval. The second dose helps to better reinforce the immune response. Single-shot vaccines and vaccines for children are under clinical consideration.

COVID-19 Vaccination Significance

Vaccination is one of the well-established and effective assets for the healthcare sector. Individual protection is the principal purpose of every vaccination program with safety as a priority. (G Voyer & Provencher, 2021). 38 lakhs people have been died due to COVID-19 till 12th June 2021. Around 9 percent (3.67L) of global deaths have been notified in India ("IndiaFightsCorona COVID-19", 2021). WHO estimates that vaccines save 2-3 million lives each year (excluding COVID-19). Vaccination plays an important role in saving people's life (Mallory et al., 2018, Shretta et al., 2021).

Vaccination scenario in India

Besides many other issues people are demand specific brand of vaccine which hampers smooth functioning of vaccination program. The best COVID-19 vaccine is the first one that is available in the vaccination centre (Evans & French, 2021). However, there is no need to wait for a specific brand. WHO and all countries are strongly in favour of Herd Immunity (Population Immunity) by vaccination. Herd immunity provides a protective barrier for those who cannot be vaccinated (Krause et al., 2020).

The primary goals of COVID-19 vaccinations are the following:

- COVID-19 vaccination reduces the spread of the virus that causes COVID-19 disease.
- As much as possible it decreases the death and severe illness associated with COVID-19 disease.
- It reduces the social and economic inequalities faced by the people due to COVID-19.
- There is normalizing and protecting of functional society against COVID-19 (Harris & Moss, 2021, Asgary et al., 2020)

New pathogens can neither be predicted nor prevented but vaccination can attain a different level of prevention as shown in table number 2.

COVID-19 Vaccination System in India

India has a major role to play in the COVID-19 vaccination effort as India is the hub of vaccine manufacturing and the second-largest population. COVID-19 vaccination drive is based on epidemiological and scientific evidence, WHO guidelines and global best practices. As of May 2021, after evaluating safety and efficacy data by Central Drug Standard Control Organization aligned with national and global guidelines, three vaccines in India were approved to prevent and reduce the risk of life-threatening COVID-19 disease for Emergency Use Authorization (EUA) (Sharun & Dhama, 2021). Vaccination for COVID-

19 is voluntary. Covaxin® (Bharat Biotech Limited)), Covishield® (Serum Institute of India and AstraZeneca's) and Sputnik - V (Russia collaboration with Dr Reddy's) have completed their clinical trials (Shrestha et al., 2021). On 3rd January 2021 India issue EUA for Covaxin® and Covishield®. Covaxin® is India's first home-produced vaccine against COVID-19. In India, the vaccination drive began on 16 January 2021 ("COVID-19 Vaccine FAQs", 2021, Kumar et al., 2021). The government of India (GoI) categorized the vaccination drive into three groups based on health priority as shown in table number 4.

Now, all citizens aged 18 years and above can register for vaccination. COVID-19 vaccination drive in the initial stages was free only for frontline and health care professionals. Later GoI announced a free vaccination drive for eligible persons in the government COVID vaccination Centre but vaccine price in the private market is high. India vaccination drives immensely utilize the Digital India program by the Co-WIN (Covid Vaccine Intelligence Work) portal for online vaccination registration.

Some significant statics for the COVID-19 Vaccination drive are shown in table number 5.

On the spot registration facility is also available on vaccination sites for limited slots every day. Digital COVID Vaccine Certificate is issued by GoI through Co-WIN portal to the beneficiary as proof of vaccination especially in case of travel. More than 14.4 % of the total population in India has received at least one shot of vaccine. ("Frequently Asked Questions on Co-WIN", 2021)

COVID-19 Vaccine Hesitancy

Vaccine hesitancy is a global problem. More than one dozen vaccines have been approved globally as a standalone chance to flatten the curve for COVID-19 disease. Hesitancy can reflect existing mistrust of medicine. Vaccine hesitancy has been a major challenge for the health sciences as many are left outside the protection shield. This term "vaccine hesitancy" was declared as top 10 threats to global health in 2019 by WHO. It is defined as "delay in acceptance or refusal of vaccines despite their availability"

Deciding whether or not to go for the vaccine is a series of complex thoughts which are influenced by a lot of hidden factors such as circumstances, groups or individual, media, factors related to vaccines such as safety, efficacy, long term side effects, religion, gender, socio-economic, politics, geography and many more (Razai et al., 2021).

Factors responsible for Vaccine Hesitancy

There were many factors highlighted for vaccine hesitancy amongst people across the globe but some listed at the top of the lists are: fear of unknown effects (42.7%) according to the 'Understanding Society' survey and lack of trust in vaccines (7%) (Robertson et al., 2021).

Infodemic: Due to the presence of social media, information travels at a faster pace than sound which results in more chaos and unnecessary information spreading around such as women shouldn't get vaccinated during menstruation. Misleading images and videos get widely spread during this which results in a greater risk. Some conspiracy theorists also claim that the vaccine will make permanent changes in the genome by altering genes (Loomba et al., 2021).

Trust in Authorities: The second wave of COVID-19 hit India by the beginning of April and left the system of this country crumbled which led to the distrust of people in the government and higher authorities. This distrust has led to vaccine hesitancy in people (Kumari et al., 2021). Time taken by the vaccines to get approved was short than any other medicines which led some theorists to believe that it is the agenda of the government to control the growing population (Goodman & Carmichael, 2021).

Lack of information: Due to the spread of misinformation, the needed information which needs to be disseminated is buried somewhere. This includes the district-level data about the vaccination centres, daily slots and basic information before getting vaccinated which is unavailable including the official and digital sources (Ahuja & Bhaskar, 2021). Most importantly, in a developing country where 65-68% population resides in rural areas, where the healthcare systems fall short and scarce than the urban area, it gets increasingly difficult to make people aware about the vaccines. Many reports by media have also reported deaths after vaccination with no proof of why they died, which in turn created a fear of getting vaccinated. Not only long-term, effects people are hesitant even about the short-term effects because they are not properly informed about it (Kumar, Rajasekharan Nayar & Koya, 2020).

Religious views: Some leaders of particular ethnic groups or faiths have been promoting that vaccine is detrimental to the general population spreading false information and claims that the vaccine contains traces of animal flesh which again creates a phobia of vaccines in individuals (Khan et al., 2020).

Socio-Economic Factors: According to Patricia Soares et al, women are most likely to refuse for the vaccination as compared to the men. If we compare amongst the men, then those who are old and educated show more readiness for vaccination. Amongst the people who lost their jobs are most likely to not get vaccinated too. Some people also believe that immunity is naturally good that's why they don't need to get vaccinated for it (Ahsan, 2021).

Deal with Vaccine Hesitancy

Here are some suggestions to deal with the problem of vaccine hesitancy such as:

- By offering tailor-made communication from the local authorities in their local language with the help of healthcare providers
- By improving the outreach to the people such as the strategy employed in Patiala, (Punjab) that each ASHA (Accredited Social Health Activist) would get 10 Rupees for each person to convince them for the vaccine. (Prakash,2021). The Central Bank of India has also offered higher interest on fixed deposits for people who have been vaccinated (Ojha, 2021).
- By developing a model or strategy that could vaccinate the people at a higher speed than right now.
- Community engagement such as some hotels are providing complementary food and drinks to the people who have taken their first shot.
- Training and educating the staff which is involved at the ground level with the patients to tell them all about the side-effects that they would be dealing with and how they should deal with it rather than panicking about it (Feleszko, Lewulis, Czarnecki & Waszkiewicz, 2021).

Conclusion

COVID-19 pandemic has drastically changed the human lifestyle and business. Vaccination comprises multiple approaches with the most effective tools for stopping the Pandemic. Without the support of the mass population it is not possible to combat COVID-19 virus. As stated, the only way out of this pandemic is if 70% population of a country or world gets vaccinated as soon as possible so as to develop herd immunity. However, at this rate it would take more than a year for the people of India to get vaccinated. Hence, a greater number of vaccine doses are required with the help of the workforce involved in the healthcare sectors. However, many organizations are coming forward to help people get vaccinated by the opening drive-through and vaccination camps. Rural areas still require to be informed by the authorities. Therefore, to cover rural areas rapidly, the government can hire local healthcare professionals to vaccinate people in their area or primary health care center. More vaccination can also be assured by lowering the prices of the vaccines in the private sector so that people can get vaccinated faster. Many anti-vaccine campaigns are going on in the world which can be tackled by providing positive and reliable information about the vaccine to combat the deadly virus.

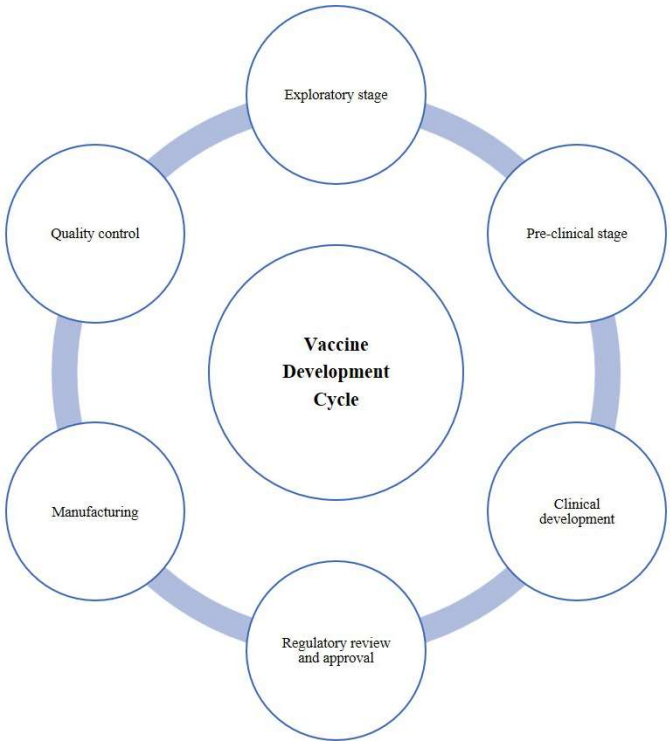

Figure1: Vaccine Development Stages (Vaccine Testing and Approval Process CDC, 2014, Le Page, 2020, Burgos et al., 2021).

Sr. No	Ingredients	Example	Purpose	References
1	Antigen	A non-dangerous small part of the pathogens like a protein or sugar, inactive, weakened or whole organism.	Generates an immune response	(Marovich et al., 2020, Peeples, 2020)
2	Preservatives	Most Common preservative 2-phenoxyethanol, Phenol, Thimerosal	Prevent the Vaccine from contamination	(Sampath et al., 2021)
3	Stabilizers	Lactose, sucrose, glycine, gelatin, and recombinant human albumin and many more.	Prevent chemical reactions	(Thorat et al., 2020, Crommelin et al., 2021)
4	Surfactants	Polysorbate 80, sorbitol, oleic acid	Prevent settling and clumping of elements	(Strizova et al., 2021)
5	Diluent	Sterile water, Normal saline (Buffer Solution)	Liquid used to dilute a vaccine to the correct concentration	(Thomas, 2021)
6	Adjuvant	Potassium aluminium sulphate, aluminium phosphate, aluminium hydroxide	Improves the immune response to the vaccine	(Liang et al., 2020)

Table No 1: Vaccine Formulation Ingredients ("How are vaccines developed", 2021)

Sr. No	Name	Vaccine Types	Country of origin
1	Covaxin (BBV152)	Inactivated vaccine	India
2	CoviVac		Russia
3	CoronaVac		China
4	BBIBP-CorV		
5	WIBP-CorV		
6	QazVac (QazCovid-in)		Kazakhstan
7	Comirnaty	mRNA-based vaccine	Multinational
8	Moderna COVID-19 Vaccine (mRNA-1273)		US
9	Sputnik V	Recombinant adenovirus vaccine	Russia
10	Sputnik Light		
11	Convidicea (PakVac, Ad5-nCoV)		China
12	ZF2001		China, Uzbekistan
13	Vaxzevria or Covishield	Adenovirus vaccine	UK
14	COVID-19 Vaccine Janssen (JNJ-78436735; Ad26.COV2. S)	Non-replicating viral vector	Netherlands, US
15	EpiVacCorona	Peptide vaccine	Russia

Table No 2: Approved vaccines in different countries till end of May 2021 (Craven, 2021)

Sr. No	Level	Purpose
1	**Level 1:** Individual Prevention	Protect a person from possible adverse short- and long-term consequences.
2	**Level 2:** Population Prevention	Prevent communicable diseases and those individuals restricted medical contraindication and age factor.
3	**Level 3:** Global Prevention	Permanent global disease eradication and avert Infections pathogens to different regions of the different country by vaccination.
4	**Level 4:** Transgenerational Prevention	protecting the current population, but also shelter for future generations

Table No 3: Classification of vaccination objectives. (Atzinger & Henn, 2020)

Sr. No	Group	Launched
1	Healthcare Professional and frontline workers	January 16th, 2021
2	People over 60 years and People between 45 and 59 years with comorbid conditions	March 1st, 2021
3	Eligible citizens above the age of 18 years	May 1st, 2021

Table No 4: Health Priority Based Vaccination Group in India ("COVID-19 Vaccine FAQs", 2021).

Sr. No	Facilities	Trends	Value	Total
1	Vaccination Sites	Government	34,529	36,116
		Private	1,587	
2	Registrations	Age 18-44	11,70,06,100	28,06,80,420
		Age 45+	16,36,74,320	
3	Vaccination Doses	Dose 1	19,96,55,293	24,61,88,067
		Dose 2	4,65,32,774	

Table No 5: India Vaccination Statics till 12th June 2021 ("CoWIN Dashboard", 2021)

References

Ahsan, S. (2021). From bogus to bizarre: A roundup of some common Covid-19 vaccine myths. Retrieved 3 June 2021, from https://www.dawn.com/news/1598703

Ahuja, A., & Bhaskar, S. (2021). COVID-19 Vaccines Myth Vs Fact: No Vaccines Do Not Alter DNA | Coronavirus Vaccine. Retrieved 5 June 2021, from https://swachhindia.ndtv.com/covid-19-vaccines-myth-vs-fact-no-vaccines-do-not-alter-dna-56612/

Asgary, A., Najafabadi, M., Karsseboom, R., & Wu, J. (2020). A Drive-through Simulation Tool for Mass Vaccination during COVID-19 Pandemic. *Healthcare*, 8(4), 469. https://doi.org/10.3390/healthcare8040469

Atzinger, L., & Henn, W. (2020). A classification of the aims of vaccination and its relevance to transgenerational justice. *Journal of Global Health*, *10*(1). https://doi.org/10.7189/jogh.10.010341

Burgos, R., Badowski, M., Drwiega, E., Ghassemi, S., Griffith, N., & Herald, F. et al. (2021). The race to a COVID-19 vaccine: opportunities and challenges in development and distribution. *Drugs In Context, 10*, 1-10. https://doi.org/10.7573/dic.2020-12-2

Cheng, V., Wong, S., Kwan, G., Hui, W., & Yuen, K. (2020). Disinfection of N95 respirators by ionized hydrogen peroxide during pandemic coronavirus disease 2019 (COVID-19) due to SARS-CoV-2. *Journal Of Hospital Infection, 105*(2), 358-359. https://doi.org/10.1016/j.jhin.2020.04.003

COVID-19 Vaccine FAQs. Mohfw.gov.in. (2021). Retrieved 3 June 2021, from https://www.mohfw.gov.in/covid_vaccination/vaccination/faqs.html.

CoWIN Dashboard. Dashboard.cowin.gov.in. (2021). Retrieved 12 June 2021, from https://dashboard.cowin.gov.in/.

Craven, J. (2021). *COVID-19 vaccine tracker.* Raps.org. Retrieved 11 June 2021, from https://www.raps.org/news-and-articles/news-articles/2020/3/covid-19-vaccine-tracker.

Crommelin, D., Volkin, D., Hoogendoorn, K., Lubiniecki, A., & Jiskoot, W. (2021). The Science is There: Key Considerations for Stabilizing Viral Vector-Based Covid-19 Vaccines. *Journal of Pharmaceutical Sciences, 110*(2), 627-634. https://doi.org/10.1016/j.xphs.2020.11.015

Evans, W., & French, J. (2021). Demand Creation for COVID-19 Vaccination: Overcoming Vaccine Hesitancy through Social Marketing. *Vaccines, 9*(4), 319. https://doi.org/10.3390/vaccines9040319

Fauci, A. (2021). The story behind COVID-19 vaccines. *Science, 372*(6538), 109-109. https://doi.org/10.1126/science.abi8397

Feleszko, W., Lewulis, P., Czarnecki, A., & Waszkiewicz, P. (2021). Flattening the Curve of COVID-19 Vaccine Rejection-An International Overview. *Vaccines, 9*(1), 44. doi: 10.3390/vaccines9010044

Frequently Asked Questions on Co-WIN. Cowin.gov. (2021). Retrieved 13 June 2021, from https://www.cowin.gov.in/faq.

G Voyer, B., & Provencher, C. (2021). *Vaccination and the Prevention of Communicable Diseases in Healthcare Settings: Lessons from the Covid-19 Pandemic - Benjamin G Voyer, Claudine Provencher, 2021.* SAGE Journals. Retrieved 13 June 2021, from https://doi.org/10.1177/11786329211019221.

Goodman, J., & Carmichael, F. (2021). Coronavirus: Bill Gates 'microchip? conspiracy theory and other vaccine claims fact-checked. Retrieved 5 June 2021, from https://covid19archive.org/files/original/035cee82a2b81fdd58577f08998d625578214f89.pdf

Harris, P., & Moss, D. (2021). Managing through the Covid second wave: Public affairs and the challenge of Covid vaccination. J*ournal Of Public Affairs, 21*(1). https://doi.org/10.1002/pa.2642

How are vaccines developed?. Who.int. (2021). Retrieved 5 June 2021, from https://www.who.int/news-room/feature-stories/detail/how-are-vaccines-developed.

IndiaFightsCorona COVID-19. MyGov.in. (2021). Retrieved 12 June 2021, from https://www.mygov.in/covid-19/.

Jeyanathan, M., Afkhami, S., Smaill, F., Miller, M., Lichty, B., & Xing, Z. (2020). Immunological considerations for COVID-19 vaccine strategies. *Nature Reviews Immunology, 20*(10), 615-632. https://doi.org/10.1038/s41577-020-00434-6

Khan, Y., Mallhi, T., Alotaibi, N., Alzarea, A., Alanazi, A., Tanveer, N., & Hashmi, F. (2020). Threat of COVID-19 Vaccine Hesitancy in Pakistan: The Need for Measures to Neutralize Misleading Narratives. The American Journal Of Tropical Medicine And Hygiene, 103(2), 603-604. doi: 10.4269/ajtmh.20-0654

Krause, P., Fleming, T., Longini, I., Henao-Restrepo, A., Peto, R., & Dean, N. et al. (2020). COVID-19 vaccine trials should seek worthwhile efficacy. *The Lancet, 396*(10253), 741-743. https://doi.org/10.1016/s0140-6736(20)31821-3

Kumar, A., Rajasekharan Nayar, K., & Koya, S. (2020). COVID-19: Challenges and its consequences for rural health care in India. Public Health In Practice, 1, 100009. doi: 10.1016/j.puhip.2020.100009

Kumar, V., Pandi-Perumal, S., Trakht, I., & Thyagarajan, S. (2021). Strategy for COVID-19 vaccination in India: the country with the second highest population and number of cases. *Npj Vaccines, 6*(1). https://doi.org/10.1038/s41541-021-00327-2

Kumari, A., Ranjan, P., Chopra, S., Kaur, D., Kaur, T., & Upadhyay, A. et al. (2021). Knowledge, barriers and facilitators regarding COVID-19 vaccine and vaccination programme among the general population: A cross-sectional survey from one thousand two hundred and

forty-nine participants. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews, 15*(3), 987-992.doi:10.1016/j.dsx.2021.04.015

Le Page, M. (2020). Inside the race for a vaccine. *New Scientist, 247*(3293), 8-9. https://doi.org/10.1016/s0262-4079(20)31303-8

Liang, Z., Zhu, H., Wang, X., Jing, B., Li, Z., & Xia, X. et al. (2020). Adjuvants for Coronavirus Vaccines. *Frontiers In Immunology, 11*. https://doi.org/10.3389/fimmu.2020.589833

Lipsitch, M., & Dean, N. (2020). Understanding COVID-19 vaccine efficacy. *Science, 370*(6518), 763-765. https://doi.org/10.1126/science.abe5938

Loomba, S., de Figueiredo, A., Piatek, S., de Graaf, K., & Larson, H. (2021). Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. *Nature Human Behaviour, 5*(3), 337-348. https://doi.org/10.1038/s41562-021-01056-1

Mallory, M., Lindesmith, L., & Baric, R. (2018). Vaccination-induced herd immunity: Successes and challenges. *Journal Of Allergy And Clinical Immunology, 142*(1), 64-66. https://doi.org/10.1016/j.jaci.2018.05.007

Marovich, M., Mascola, J., & Cohen, M. (2020). Monoclonal Antibodies for Prevention and Treatment of COVID-19. *JAMA, 324*(2), 131. https://doi.org/10.1001/jama.2020.10245

Ojha, S. (2021). This bank is offering higher interest on fixed deposit for getting vaccinated. Retrieved 10 June 2021, from https://www.livemint.com/money/personal-finance/got-covid-vaccine-this-bank-is-giving-higher-interest-on-fixed-deposit-fd-for-getting-vaccinated-11618275209760.html

Peeples, L. (2020). News Feature: Avoiding pitfalls in the pursuit of a COVID-19 vaccine. *Proceedings Of The National Academy Of Sciences, 117*(15), 8218-8221. https://doi.org/10.1073/pnas.2005456117

Pezzotti, P., Bellino, S., Prestinaci, F., Iacchini, S., Lucaroni, F., & Camoni, L. et al. (2018). The impact of immunization programs on 10 vaccine preventable diseases in Italy: 1900-2015. *Vaccine, 36*(11), 1435-1443. https://doi.org/10.1016/j.vaccine.2018.01.065

Prakash, K. (2021). Achieving vaccination target: ASHA workers to get Rs 10 per beneficiary. Retrieved 4 June 2021, from https://www.tribuneindia.com/news/patiala/achievingvaccination-target-asha-workers-to-get-rs-10-per-beneficiary-236165

Razai, M., Chaudhry, U., Doerholt, K., Bauld, L., & Majeed, A. (2021). Covid-19 vaccination hesitancy. *BMJ*, n1138. https://doi.org/10.1136/bmj.n1138

Robertson, E., Reeve, K., Niedzwiedz, C., Moore, J., Blake, M., & Green, M. et al. (2021). *Predictors of COVID-19 vaccine hesitancy in the UK household longitudinal study*. Retrieved 13 June 2021, from https://doi.org/10.1016/j.bbi.2021.03.008.

S Mehdi, T. (2021). To take or not to take? Myths and facts about COVID-19 vaccine explained. Retrieved 7 June 2021, from https://www.newindianexpress.com/cities/hyderabad/2021/feb/20/to-take-ornot-to-take-myths-and-facts-aboutcovid-19-vaccine-explained-2266323.html

Sampath, V., Rabinowitz, G., Shah, M., Jain, S., Diamant, Z., & Jesenak, M. et al. (2021). Vaccines and Allergic reactions: The past, the current COVID?19 pandemic, and future perspectives. *Allergy*. https://doi.org/10.1111/all.14840

Shah, A., Marks, P., & Hahn, S. (2020). Unwavering Regulatory Safeguards for COVID-19 Vaccines. *JAMA, 324*(10), 931. https://doi.org/10.1001/jama.2020.15725

Sharun, K., & Dhama, K. (2021). India's role in COVID-19 vaccine diplomacy. *Journal Of Travel Medicine*. https://doi.org/10.1093/jtm/taab064

Shrestha, Y., Venkataraman, R., Moktan, J., Chitti, R., & Yadav, S. (2021). COVID-19 Vaccine Authorized in India-A Mini Review. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3836545

Shretta, R., Hupert, N., Osewe, P., & White, L. (2021). *Vaccinating the world against COVID-19: getting the delivery right is the greatest challenge*. Retrieved 13 June 2021, from http://dx.doi.org/10.1136/bmjgh-2021-005273.

Strizova, Z., Smetanova, J., Bartunkova, J., & Milota, T. (2021). Principles and Challenges in anti-COVID-19 Vaccine Development. *International Archives Of Allergy And Immunology, 182*(4), 339-349. https://doi.org/10.1159/000514225

Thomas, K. (2021). Intramuscular Injections for COVID-19 Vaccinations. *Journal Of Nuclear Medicine Technology, 49*(1), 11-12. https://doi.org/10.2967/jnmt.121.262049

Thorat, B., Sett, A., & Mujumdar, A. (2020). Drying of Vaccines and Biomolecules. *Drying Technology*, 1-23. https://doi.org/10.1080/07373937.2020.1825293

Vaccine Testing and Approval Process | CDC. Cdc.gov. (2014). Retrieved 2 June 2021, from https://www.cdc.gov/vaccines/basics/test-approve.html.

Vergara, R., Sarmiento, P., & Lagman, J. (2021). Building public trust: a response to COVID-19 vaccine hesitancy predicament. *Journal Of Public Health, 43*(2), e291-e292. doi: 10.1093/pubmed/fdaa282

Wang, J., Peng, Y., Xu, H., Cui, Z., & Williams, R. (2020). The COVID-19 Vaccine Race: Challenges and Opportunities in Vaccine Formulation. *AAPS Pharmscitech, 21*(6). https://doi.org/10.1208/s12249-020-01744-7

Article

Perception and Retaliation to Global Pandemic: COVID-19

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.27-36
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Vineeta Shukla
Department of Zoology, M. D. University, Rohtak, Haryana, 124001

Tamanna Kumari
Department of Zoology, M. D. University, Rohtak, Haryana, 124001

Abstract

Second wave of COVID-19 got intensified with every passing hour conjuring up unconvincing dead toll. During the second encounter, the major problems included large number of asymptomatic patients, health care associated channeling and new variants with new symptoms. Till the time we understand the epidemiology of one strain, a new variant evolves in a part of the world. One to two weeks is the standard period of incubation. Coronaviruses are known to cause respiratory and enteric disease in humans and animals. Here is a review to compare and summarize the previous corona virus confronts. Every country is in race to develop a vaccine to defend humanity by sharing resources (vaccines, oxygen, medication, detection kits) and knowledge gaps. However, more scholarly work is needed to be produced to overpower these types of pandemics.

Keywords: Clinical manifestation, Epidemiology of COVID-19, Outbreak, Viral mystery, Prevention

Corresponding author:
Vineeta Shukla, Department of Zoology, M. D. University, Rohtak, Haryana, 124001
Email: prof.vineetashukla@gmail.com

Introduction

According to Wall Street Journal patient zero for COVID-19 has been identified as a 57-year-old Shrimps seller, Wei Guixian in the Huanan Sea food market of Wuhan, China. She developed common cold manifestations and visited local clinic on December 10, 2019. On December 16, 2019 she visited Wuhan Union Hospital where she didn't respond to the common cold treatment and she was quarantined by the end of December 2019. Till then a group of patients showing same manifestations were observed in Wuhan, China. WHO identified the causative agents as corona virus and entitled it as Corona Virus Disease 2019 (COVID-19) on February 11, 2020, based on the varying similarity indices (e.g., phylogeny) to Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS); International Committee on Taxonomy of Viruses (ICTV) renamed it as SARS-CoV-2.

Originated in Wuhan Sea food market, the virus travelled internationally with the people moving out of transportation hub. Around 175000 people left Wuhan on January 1, 2020 only to celebrate lunar New Year and around 7 million in January, 2020. First overseas patient for COVID-19 was a 61-year-old lady in Bangkok on January 13, 2020. The first death was recorded on January 11, 2020. As there were exponential rise in the cases, Wuhan city (11 million people) was under lockdown on January 23, 2020. Very soon India and other countries evacuated their citizens from China and placed them under isolation for 14 days.

Epidemiology of COVID-19

The principal route of channeling is from bats to intervening entertainer to humans. Possible routes of channeling of 2019-nCoV are- respiratory droplets (sneezing, coughing, talk) and physical contact (within 6 feet). It is also believed that it can spread through fecal -oral channeling. Suspicion is there over aerosol possibility and pregnant woman passing it over to her child.

The indirect channeling is by contaminated surfaces like doorbells, lift buttons, stairs, grocery etc. which may endanger rest healthy persons frequently. Eyes, nose, and mouth are the most reliable entry point of virus to human system.

Nosocomial channeling is a serious problem related to all the three viruses. This property leads to extreme burden on the health system and hindered early spotting of infected persons. Wang et. al. 2020 reported that 41% patients were suspected to be infected due to nosocomial channeling, 26% patient received ICU care and mortality of 43% from 138 COVID-19 hospitalized patients.

The four stages of COVID-19 in accordance with WHO

Stages	Channeling
1	Imported cases
2	Local transmission
3	Community spread
4	Transmission out of control

Centered on severity, it can be divided as mild, moderate, severe, and critical. The main traits of this virus are highly penetrative and spread like a forest fire as we have witnessed with respect to China, Italy, Spain, America, and India, already in community transfer. Initially it broke out locally, then community-wise and then it was global -widespread pandemic. The spread and cruelty of COVID-19 is beyond color, cast, religion and financial status. It is highly contagious in nature and unpredictable too. The world was never prepared for this kind of pandemic (Kumari and Shukla, 2020). Death cases are mainly middle-aged and elderly patients with pre-existing comorbidities (hypertension, coronary heart disease, obesity, and diabetes etc.).

Phylogeny of corona virus

Classification (Li, 2016; Song et. al., 2019)

Order- *Nidovirales*

Family- *Coronaviridae*

Genus- *Betacoronavirus*

Subgenus- *Sarbecovirus*

Corona virus term was first used by June Almeida and David Tyrrell in 1930 (Tyrrell & Fielder 2002). The first encounter with SARS-CoV was in November 2002, second as MERS-CoV in April 2012 and the most recent is December 2019 as SARS-CoV-2. On January 10, 2020, a team of scientist guided by Prof. Yong- Zhen Zhang characterize the genome of SARS-CoV-2 who has > 96.2% similarity with bat corona virus CoV RaTG13, 79% to SARS-CoV and 50% to MERS-CoV (Wang et. al., 2020). These are zoonotic disease with intermediate host for all three are palm civets, dromedary camels, pangolin/ snakes with a common reserve host as bats.

Corona virus has a crown like appearance (because of the glycoproteins protrusions), single stranded RNA virus. Its genome ranges from 29891- 29903 ribonucleotide following MERS-CoV with 30119 and followed by SARS-CoV with 29727 ribonucleotides (Wang et. al., 2020; Woo et. al., 2009). SARS-CoV -2 genome possess 14 open reading frames, encoding 27 proteins, while the rest two have 11. The ACE_2 (Angiotensin receptor 2) or CD209L, DPP4 (Dipeptidyl peptidase 4), ACE_2 (Angiotensin receptor 2) are the receptor

protein for the three. One of the four major structural protein, spike surface glycoprotein(S) helps in binding virus to these receptors (ACE_2) (Zhou et. al., 2020), present in copious number in Type 2 alveolar cell of lower respiratory tract. The other three proteins that major structural genes encode for, are small envelope protein (E), matrix protein (M) and nucleocapsid protein (N) (Wu et. al., 2020). Nucleocapsid and spike protein are used for spotting are the most abundant, varying, conserved, and easy to detect protein. Corona virus showed rapid mutation rate as per genome analysis from varying patients of varying provinces of world.

Clinical and scholarly manifestations

Recurrence of prodromes in COVID-19 victims (within 8 days of encounter) (Guan et. al., 2020; Chen et. al., 2020)

Prodromes	Repetition (%)
Fever	83-99
Cough	59-82
Difficulty in breathing	31-40
Loss of appetite	40-84
Loss of taste, smell	30
Muscles and body ache	11-35
Joint pain	15
Sore throat	14
Headache	14
Chills	11

Viral count in symptomatic and asymptomatic people is higher in the nasal cavity as compared to the throat (Zou et. al., 2020). Smokers are most likely to have 2.4 more grave indication as compared to non-smokers. Severe patients show one of dyspnea, RR>30 times/min, oximeter reading <93% or a 3% deep in oxygen saturation after 3-6 minutes' walk or PaO2/FiO2<300 mmHg. Acute ones show either one of the acute respiratory distress syndromes (ARDS), septic shock, metabolic acidosis, clotting disorders, and multiple organ failure. Lymphopenia (draining of CD4 and CD8 lymphocytes) is a deciding facet for disease severity and mortality.

Laboratory features of COVID-19 include increased activity of some enzymes like lactate dehydrogenase, alanine transaminase and creatinine kinase increased D-Dimer, increased C-reactive protein. The lung samples show following diagnostic characteristics: "bilateral diffuse alveolar damage with cellular fibromyxoid exudates, thickening of interlobular septa (Cobblestone changes). The lungs showed Interstitial mononuclear inflammatory infiltrates, dominated by lymphocytes, evident desquamation of pneumocytes, pulmonary oedema and hyaline membrane formation, indicating acute respiratory distress syndrome. Multi

nucleated syncytial cells with atypical enlarged pneumocytes characterized by large nuclei, amphophilic granular cytoplasm, and prominent nucleoli were identified in the intra-alveolar spaces, showing viral cytopathic-like changes. Peripheral blood was prepared for flow cytometric analysis. We found that the counts of peripheral CD4 and CD8 T cells were substantially reduced, while their status was hyper activated. Moreover, CD8 T cells were found to harbor high concentrations of cytotoxic granules."

Diagnosis

Diagnosis of COVID-19 is based on epidemiological features. Laboratory spotting included for earlier coronaviruses include genomic sequencing, RT-PCR, Enzyme-linked immunoassay (ELISA) and blood (antibody) tests. As the present virus is new so the world is currently facing the problem related to its spotting. Learning from previous encounters suspected patients, are diagnosed with chest CT, molecular technologies. Nucleic acid tests (RT-PCR) are fast and more reliable (ICMR). However, there are certain limitation attached with these test as false results, contamination of nasal and throat swabs and short spotting window. ELISA is urged as sampling through blood is much less stringent, quick results and cost efficacious as well. Antigens used in ELISA may react with antibodies against 4 other human coronaviruses that occurred in common colds. With increasing number of cases, the rapid spotting kits are also being to be used in varying countries. These kits use blood sample and look for the antibodies (IgM and IgG) because they provide longer spotting window and recognize the asymbolic patients. Also, antibody test can be used to verify vaccines under trial. According to a study sensitivity of chest CT is more as compared to RT-PCR as in some cases the RT-PCR shows negative results initially (Fang et. al., 2020).

Treatment

There is no authorized medication against SARS-CoV -2 so far. Varying viewpoints are on the table for patients varying in their preexisting medical history. Four principles are important in patient management: "early recognition", "early isolation", "early diagnosis" and "early treatment" (Chen et al. 2020). Based on earlier confront with SARS and MERS various antiviral drugs are being exercised in varying combinations to combat COVID-19.

Intravascular immune globulin, corticosteroids can be used in certain mild or moderate cases. For respiratory support, ventilation technique and hemo (dia) filtration / plasma exchange can be applied. Recovery started in 2nd or 3rd week with median stay in hospital was 10 days (Singhal 2020).

Drugs showing latent repercussions against COVID-19 (Rossignol 2014, 2016; Furuta et. al., 2013; Cardile et. al., 2017; Singhal 2020; Guo et. al., 2020; McQuade and Blair 2015;

Wang et. al., 2020; Tsang and Zhong 2003; Nishimura and Yamaya 2015; Wang et. al., 2020; Vincent et. al., 2005; Government of India; Dong et. al., 2020.)

Route of operation	Aftermath	Action	Medication
Oral	Diarrhea, headache, muscle pain liver and pancreas damage allergic reaction, stomach pain, discolored urine nausea, seizures, deafness, vision change cardiac, eye, ear disorder redness, burning, numbness	Protease inhibitor	Lopinavir/Ritonavir
			Darunavir
		Inhibit viral and cell membrane fusion	Arabidol
		Antiprotozoal agent	Nitazoxanide
		Neuraminidase inhibitor	Oseltamivir
		Increase endosomal pH	Chloroquine
		Nucleoside analogue	Ganciclovir
			Penciclovir (Topically)
			Ribavirin
			Remdesivir
Intravenous infusion	Nausea, fever, headache increased liver enzyme, nausea, vomiting cardiac arrest anaphylaxis, QT prolongation, diarrhea	Synthetic serine protease inhibitor	Nafamostat
		Inhibit translation of RNA	Azithromycin (oral)

Prevention and control

Local channeling will lead to clustering of cases in time and space. The prevention strategy will be: hand hygiene, testing, isolation, quarantine of suspected and close related contacts and social distancing. Contagious during latency period, nosocomial channeling and asymptomatic channeling are some of cause of widespread of COVID-19.

Along with the whole world, India is making out all efforts to save the citizens from this deadly corona virus. All states of India are under lockdown under the Disaster Management Act, 2015. This step of social distancing is being appreciated globally. Measures taken by Indian government:

- Tracing contact of infected persons
- Sanitization
- Suspension of all transportation services
- Economical help to poor, daily wage earners, orphans due to COVID-19 through a special budget
- Railways coaches converted to isolation wards
- Yoga to reduce mental trauma.
- Coordinated approach towards scientific community (collaboration, sharing and avoiding duplication of work)
- Walk in kiosk to test for COVID-19 to ensure safety of medical personals.

- Providing oxygen cylinder and medicine kit at home to mild or moderate patients

Personal measures include

- Maintaining cough hygiene
- Washing hands frequently
- Avoid touching eyes, mouth and nose with unwashed hands
- Using face masks and shields
- Regular decontamination of surfaces that can be possible source of infection
- People should stop spread of any COVID-19 related news instead back up by any scientific proof
- Relive panic and anxiety
- Proper diet and rest for patient with other infections
- Maintaining water-electrolytes balance, and oxygen saturation
- Oxygen therapy by nasal catheter, noninvasive or invasive mechanical ventilation for moderate victims at home
- Plasma donation by those whose have recovered from it

Conclusion

As most symptoms of COVID-19 are in common with common flu symptoms so population must understand the difference as well as the severity of the respiratory distress syndrome. Instead of rushing to hospital, mild to moderate patients needs to stay back at home under observation of the practitioner. Maintaining proper hygiene for one and all is required specially patients admitted to ICU and under oxygen therapy to reduce the encounter against mucormycosis. The current approach in terms of medications involve the use of tocilizumab (immunosuppressive drug). Peptidic fusion inhibitors, anti-SARS-CoV-2 neutralizing monoclonal antibodies, anti ACE_2 monoclonal antibodies, and protease inhibitor are also practiced. Till date there is no vaccine or therapeutic agent 100% efficacious agents COVID-19. Vaccines provide protection against virus for few months. Reduce and/or stop the spread of virus is the only and most significant way to tackle the situation.

References

A report by World Health Organization. COVID-19. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

A report by World Health Organization. Severe acute respiratory syndrome. https://www.who.int/health-topics/severe-acute-respiratory-syndrome#tab=tab_1

Advisory to start rapid antibody based blood test for COVID-19 by Indian council of medical research.

Cardile, A., Warren, T., Martins, K., Reisler, R., Bavari, S. (2017). Will there be a cure for Ebola? *Annual Review of Pharmacology and toxicology*. 57:329-348.

Chen, H., Guo, J., Wang, C., Luo, F., Yu, X., Zhang, W., Li, J., Zhao, D., Xu, D., Gong, Q., Liao, J., Yang, H., Hou, W. and Zhang, Y. (2020). Clinical characteristics and intrauterine vertical channeling potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet.* 7;395(10226):809-815. doi: 10.1016/S0140-6736(20)30360-3. Epub 2020 Feb 12.

Chen, Z., Fu, J., Shu, Q., Chen, Y., Hua, C., Li, F., Lin, R., Tang, L., Wang, T., Wang, W., Wang, Y., Xu, W., Yang, Z., Ye, S., Yuan, T., Zhang, C., and Zhang, Y. (2020). Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus. *World journal of pediatrics*. 16(3):240-246. doi: 10.1007/s12519-020-00345-5. Epub 2020 Feb 5.

Containment plan for large outbreaks of novel coronavirus disease 2019 (COVID-19) by Ministry of Health and Family Welfare Government of India.

Dong, L., Hu, S., and Gao, J. (2020). Discovering drugs to treat coronavirus disease 2019 (COVID-19). *Drug discoveries & therapeutics*. 14: 58-60.

Fang, Y., Zhang, H., Xie, J., Lin, M., Ying, L., Pang, P., and Ji, W. (2020). Sensitivity of chest CT for COVID-19: Comparison to RT-PCR. *Radiology*. In press.

Furuta, Y., Gowen, B., Takahashi, K., Shiraki, K., Smee, D., and Barnard, D. (2013). Favipiravir (T705), a novel viral RNA polymerase inhibitor. *Antiviral Research*. 100: 446-454.

Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., Liu, L., Shan, H., Lei, C., Hui, D., Du, B., Li, L., Zeng, G., Yuen, K., Chen, R., Tang, C., Wang, T., Chen, P., Xiang, J., Li, S., Wang, J., Liang, Z., Peng, Y., Wei, L., Liu, YHu, Y., Peng, P., Wang, J., Liu, J., Chen, Z., Li, G., Zheng, Z., Qiu, S., Luo, J., Ye, C., Zhu, S., and Zhong, N., (2020) Clinical characteristics of coronavirus disease 2019 in China. *The New England journal of medicine*. 382(18):1708-1720. doi: 10.1056/NEJMoa2002032. Epub 2020 Feb 28.

Guo, Y., Cao, Q., Hong, Z., Tan, Y., Chen, S., Jin, H., Tan, K., Wang, D., and Yan, Y. (2020). The origin, channeling and clinical therapies on coronavirus disease 2019 (COVID- 19) outbreak- an update on the status. *Military Medical Research*. 7: 11.

Kumari, T. and Shukla V. (2020). COVID-19: towards confronting and unprecedented pandemic. *International Journal of Biological Innovations (IJBI)*. 2 (1), 1-10.

Li, F. (2016). Structure, function, and evolution of coronavirus spike protein. *Annual review of virology.* 3: 237-261.

McQuade, B. and Blair, M. (2015). Influenza treatment with oseltamivir outside of labeled recommendations. *Am J Health-syst pharma*. 72: 112-116.

Nishimura, H., and Yamaya, M. (2015). A synthetic serine protease inhibitor, Nafamostat Mesilate, is a drug potentially applicable to the treatment of ebola virus disease. *Tohoku J Exp Med*. 237: 45-50.

Rossignol, J. (2014). Nitazoxanide: a first-in -class broad-spectrum antiviral agent. *Antiviral research*. 110: 94-103.

Rossignol, J. (2016). Nitazoxanide, a new drug candidate for the treatment of Middle East respiratory syndrome coronavirus. *Journal of infection and Public health*. 9: 227-230.

Singhal, T. (2020). A review of coronavirus disease- 2019 (COVID-19). *The indian journal of pediatrics*. 87(4):281-286. doi: 10.1007/s12098-020-03263-6.

Song, Z, Xu, Y., Bao, L., Zhang, L., Yu, P., Qu, Y., Zhu, H., Zhao, W., Han, Y., and Qin, C. (2019). From SARS to MERS, thrusting coronaviruses into the spotlight. *Viruses*. 11: 59.

Tsang, K., and Zhong, N. (2003). SARS: pharmacotherapy. *Respirology*. 8: 25-30.

Tyrrell, D., and Fielder, M. (2002) M. Cold Wars: The Fight Against the Common Cold. Oxford University Press. ISBN 978-0-19-263285-2. 96.

Vincent, M., Bergeron, E., Benjannet, S., Erickson, B, Rollin, P., Ksiazek, T., Seidah, N., and Nichol, S. (2005). Chloroquine is a potent inhibitor of SARS coronavirus infection and spread. *Virology Journal*. 2:69.

Wang, D., Hu, B., Chang, H., Zhu, F., Liu, X., Zhang, J., Wang, B., Xiang, H., Cheng, Z., Xianog, Y., Zhao, Y., Li, Y., Wang, X., and Peng, Z. (2020) Clinical characteristics of 138 hospitalized patients with the 2019 novel coronavirus- infected pneumonia in Wuhan, China. *Jama*. 17;323(11):1061-1069. doi: 10.1001/jama.2020.1585.

Wang, M., Cao, R., Zhang, L., Yang, X., Liu, J., Xu, M., Shi, Z., Hu, Z., Zhong, W., and Xiao, G. (2020). Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell Research*. 0: 1-3.

Wang, Y., Wang, Y., Chen, Y., and Qin, Q. (2020). Unique epidemiological and clinical features of the emerging 2019 novel coronavirus pneumonia (COVID-19) implicate special control measures. *Journal of medical virology*. 92(6):568-576. doi: 10.1002/jmv.25748. Epub 2020 Mar 29.

Woo, P., Lau, S., Huang, Y., and Yuen, K. (2009). Coronavirus diversity, phylogeny and interspecies jumping. *Experimental Biology and Medicine*. 234: 1117.

Wu, A., Peng, Y., Huang, B., Ding, X., Wang, X., Niu, P., Meng, J., Zhu, Z., Zhang, Z., Wang, J., Sheng, J., Quan, L., Xia, Z., Tan, W., Cheng, G., and Jiang, T. (2020). Genome composition and divergence of the novel coronavirus (2019- nCoV) originating in China. *Cell host and microbe*. In press.

Zhou, P., Yang, X.,Wang, X., Hu, B., Zhang, L., Zhang, W., Si, H., Zhu, Y., Li, B., Huang, C., Chen, H., Chen, J., Luo, Y., Guo, H., Jiang, R., Liu, M., Chen, Y., Shen, X., Wang, X., Zheng, X., Zhao, K., Chen, Q., Deng, F., Liu, L., Yan, B., Zhan, F., Wang, Y., Xiao, G. and Shi, Z. (2020). A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature*. 579: 270-273.

Zou, L., Ruan, F., Huang, M., Liang, L., Huang, H., Hong, Z., Yu, J., Kang, M., Song, Y., Xia, J., Guo, Q., Song, T., He, J., Yen, H., Peiris, M., and Wu, J. (2020). SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *The New England journal of medicine*. 382: 1177-1179.

Article

Covid-19 and Society: A Sociological Analysis

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.37-44
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Desraj Sabharwal
Professor & HOD, Department of Sociology, M.D. University, Rohtak (Haryana).

Baleshwer Dutt
JRF, Department of Sociology, M.D. University, Rohtak (Haryana)

Neeraj
JRF, Department of Sociology, M.D. University, Rohtak (Haryana)

Abstract

Covid-19 pandemic has proved to be a disaster for the whole world. Whether it is economy, health structure, education, transportation and communication, or social relations each and every aspect of human life has been affected by it. To control the spread, governments imposed lockdown in phases with guidelines to shutdown many business activities, closure of educational institutions and religious places, limitation on social gatherings etc. This led to unemployment causing financial and psychological stress which has resulted into many social problems. Anxiety and depression due to insecurity and unpredictability of future and social isolation due to restrictions on movement has affected the social relations. It has affected all sections of society- economically, socially and psychologically. This paper aims to explore the socio-psycho impact of Covid-19 in context of India.

Keywords: Covid-19, Lockdown, Social Impact, Crisis, Anxiety

Corresponding author:
Dr. Desraj Sabharwal, Professor & HOD, Department of Sociology, M.D. University, Rohtak (Haryana)
Email- desraj.sabharwal@yahoo.in

Introduction

The whole world is facing crisis as a result of spread of coronavirus disease (Covid -19) which is caused by a new strain of Corona virus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It engulfed the whole world within a short period of 2-3 months, spreading human sufferings and killing people. The first case was reported from Wuhan city of China in December 2019 and World Health Organization declared the outbreak a Public Health Emergency of International concern on 30 January 2020, and a pandemic on 11 March 2020. The world has faced pandemics earlier as well but its high infection rate (or incident rate) and fast mutating character makes it more dangerous and is creating chaotic situation. Globally, till 13/08/2021, it has infected more than 20 crore people and taken life of more than 43 lakhs (WHO, 2021).

In India, the first case of Covid-19 was reported from Kerala on 30 January 2020 and government of India declared "Janata Curfew" on 20 March 2020 and a strict lockdown all over India from 22 March 2020 to prevent the spread of the disease. India is on the second place in the number of confirmed cases (only behind USA) and third in number of deaths due to it (behind USA and Brazil). Till 13 August 2021, 3.2 crore people have been infected and 4.3 lakhs have died of it in India (MOHFW, 2021). These are the officially reported numbers while the real numbers are higher (Baud et al., 2020). It has created an unstable environment for all and has halted many economic and social activities. It has created an unprecedented unpredictable chaotic situation for which even the developed nations like USA, UK, Germany, France etc. are not equipped properly to tackle. Developing nations like India are more vulnerable to its impacts due to fragile and poor health care system, weaker macroeconomic frameworks and more pervasive poverty (World Bank, 2020).

The COVID-19 is a human, economic, social crisis and not just a health crisis. Its outbreak has affected all segments of the population whether rich or poor, educated or uneducated, male or female, young or elderly but comparatively more detrimental to members of those social groups in the most vulnerable situations, including people living in poverty, older persons, persons with disabilities, children, and women (UN, 2020). Restrictions imposed by governments to control the spread of the disease has lead to halt of many economic activities due to which many people have lost their jobs or had to shut down their business activity. It has caused a wide spread unemployment and abject poverty which has resulted into many social problems.

Family Relations

Covid-19 has impacted the family relations severely. Social distancing and isolation can cause negative impact on relationships (Singh and Singh, 2020). The burden of stress and

anxiety due to lockdown has been faced by women and children in the form of domestic violence. According to the National Commission for Women the cases of domestic violence drastically increased during the lock down period (Chandra, 2020). Due to insecurity and anxiety, caused by Covid-19 crisis, people are not able to control their temperament and vent out their anger on family members specially the partner. This suggests that women have suffered at hands of their partners and family members along with the physical and mental self-suffering due to the Covid-19. Some activists also suggest that the number of cases of domestic violence being reported are very less than the actual number as the lockdown has restricted the movement and personal space or privacy at home because of which victims are not able to report physically or make phone calls on helpline numbers.

It has also impacted the parent- child relation. Due to closure of schools and businesses, parents and children spent more time with each other. This has lead to different consequences for different class groups. On the one hand this improved the relationship and understanding between them. But, this is the story of middle and upper class only who have economic security. While on the other hand where parents lost their jobs and developed a tense home environment, children were at the receiving end of the anger of parents with no escape point.

Social Relations

Maintaining physical distancing should have been the norm to put a bar on Covid-19 but it has become social distancing as the term used in general which led to cutting social exchange among friends, neighbours, relatives and close social circles. Curtailing the social gatherings, family functions, cultural/ religious processions and political rallies has made people feel alienated and a fear trapped in minds specially in urban settings where people generally have limited social interaction. Covid-19 lockdown has made them feel more isolated than ever before with the fear of loss of life if they contact anyone outside. Pandemic has left social bonds and social relationships shattered. Restriction on movement outside the home is not the only challenge to mental wellness but quarantine period at home or isolation centres deepens the loss of social detachment. Separation from loved ones, bar on healthy outdoor entertainment, feeling of thralldom, helplessness and uncertainty of advancement of diseases has affected the population more (Li and Wang, 2020).

This whole scenario has led to some more dangerous and undesired consequences like increase in suicide rate due to frustration, uncertainty of cure and hopelessness of future (Goyal et al., 2020). Social exclusion and separation has shown a different face of humanity specially in rural areas. A sense of fear has been created by various news channels making people feel more insecure always. This resulted into far more separation and became a curse for those suffering from Covid-19 illness. They are neglected, deserted and little

care is offered to them in difficult times. Community standards of helping care and services has bowed down to the pandemic.

Education

Education is undoubtedly the most crucial aspect contributing to the growth of the country and well being of all. Covid-19 affected the system of education in various ways through out the world. Educational institutions were asked to shut down the services/ functions in lockdown period in physical mode. Earlier, it was thought that the lockdown would last only for few months so there was no preparation done for alternative mode of education. As lockdown extended, private educational institutions started preparing for online education but government educational institutions specially in rural areas were far behind as they were not well equipped and not having the proper channels to deliver education through online mode. The most vulnerable students who belong to economically weaker section study in government schools have suffered the most. Later, when it was observed that lockdown period would extend further, government teachers channelled their activities online for imparting education to students. But it has been a big challenge for both the teachers and students as teachers were not trained for this and many students did not have the resources like smartphone, internet connection or wifi.

Weak internet connectivity, unconducive home environment for study and lack of knowledge of using online platforms have made the things worse. According to global internet network research just 24 per cent of households have a consistent internet connection while other remote areas remain unreachable (Rodricks, 2021). Many stories become the headlines of newspaper as - girl taking class on top of hill, student in the field for online class, father sold his cattle for buying smart-phone for his child for online classes and many more. The situation is more complex for those having two or more school/ college going children and there is only one smart device to take online classes (due to financial constrains) and timing of the classes coincide for more than one. As a result of this many students had to suffer or give up their study for months. Studies show that " pandemic has denied 32 core students of education this can be seen as a national crisis which will lead to increase in unemployment" (Rodricks, 2021). The online mode of education has its negative side also. Access to virtual world through smart-phones made them addicted to some of undesired online platforms. Denying the physical activities they have became habitual of on-screen activities and remain glued to the smart-phone for video games, chatting, social media platforms like youtube, facebook, instagram etc.

Health

World has witnessed pandemics earlier also but Covid-19 is much more dreadful than the previous ones. At the early stage people did not take it seriously and various memes

mocking Covid-19 circulated in media but as the number of casualties increased people realised the severity of the disease. Initially, it was taken as a flu confined to respiratory system but later it was diagnosed that it affects other parts of body as well. With the passage of time, doctors and scientists came to know about various variants of virus which were the results of mutation of the virus genes. Almost all variants have been associated with some common features including fever or chills, fatigue, headache, shortness of breath, diarrhoea, loss of taste and smell and nausea or vomiting.

At the initial stage of pandemic, infected people were stigmatised because of which they avoided to get tested. Many cases were reported in which people in rural areas having symptoms of Covid-19 were not willing to go for RT-PCR test. They consulted the village chemists, Quacks and took medicine for fever or cold or headache and rushed to hospital only when they suffered from heavy breathing difficulty. Therefore, the casualties increased due to lack of knowledge, proper initial treatment, fear of hospitalisation in isolation wards and rumours of removal of body organs in localities. With severe impact on physical health it affected the mental health also as people lost their jobs and it became hard for them to earn bread and to fulfil family needs. This led to distress, anxiety, and a situation of depression among all sections of society specially in the middle and lower class (Bedi and Khan, 2020). People were uncertain of what will happen next as reports in media have been coming with new surprises everyday. It has also post recovery complications in body like lungs failure, black fungus, white fungus, yellow fungus, damage of body parts, low blood pressure and possibilities of cardiac arrest and so on.

Economy

To contain the spread of Covid-19 countries imposed lockdown and other restrictions because of which many economic activities were halted. Many factories had to shutdown and many had to reduce the production as the consumer demand decreased. To maintain the production cost and avoid the loss, companies laid off employees. Also, business activities related to tourism, event management, hospitality and travelling were strictly restricted which rendered people involved in these activities unemployed. This increased the unemployment rate to its peak and created financial problem for most of the population. According to estimates, it has pushed 1.2 crore people into extreme poverty in India (Trivedi and Beniwal, 2020). This has also lead to the phenomenon of reverse migration to villages which has increased the burden on rural economy, which is already under stress (Singh, 2020). It has resulted in increase in suicide rate in rural areas (Hossain et al., 2020).

In agriculture/ primary sector also Covid-19 had its impact. While the food grain production was not affected much because of non-perishable nature of food grains but horticulture faced the burnt as fruits and vegetables are perishable and exports got reduced due to

restriction on movement (Aneja and Ahuja, 2021). Floriculture also got affected because of the reduction in demand due to restrictions on the social events like marriages and parties and closure of religious places. However, overall agriculture sector remained a bright spot as compared to other sectors in India amid Covid-19 crisis and CRISIL expects the growth rate of 2.5% in this sector in FY2021 (CRISIL, 2020).

Conclusion

As the Covid-19 disease spread quickly throughout the world and became a pandemic, containment of spread and treatment of the infected individuals were taken at priority and little attention was given to its socio-economic impact. But it is clear from the studies that it has far reaching socio-economic and psychological impact in both short and long term. It has completely disturbed the day to day life of people and has created an insecure, unpredictable and chaotic environment. It has affected all segments of the society, varying in way and magnitude. It has caused wide spread unemployment and has taken life of bread earners of many families which has resulted in economic distress and anxiety among family members. This has led to many social problems like poverty, domestic violence, increase in crime rate etc. It has rendered many families, specially those who have economic insecurity and have lost their bread earner, in such a condition from where the recovery is very hard. Elder people and children, who are dependent on others, have suffered the most. Overall the society has also gone in reverse gear in many socio-economic parameters in which we were progressing before the outbreak of the pandemic like poverty alleviation and education. From the experience of first two waves of the disease, it is clear that the right measures at the right time need to be taken to control the spread of the disease and its impact or it will lead to such harsh socio-economic and psychological consequences which will make the generations suffer.

References

Aneja, R., & Ahuja, V. (2021). An assessment of socioeconomic impact of COVID-19 pandemic in India. *Journal of Public Affairs, 21*(2), e2266.

Baud, D., Qi, X., Nielsen-Saines, K., Musso, D., Pomar, L., & Favre, G. (2020). Real estimates of mortality following COVID-19 infection. *The Lancet infectious diseases, 20*(7), 773.

Bedi, S., & Khan, W. (2020). Psycho-social impact of covid-19 in India. *Indian Journal of Health Sciences and Care, 7*(si1), 143-150.

Chandra, J. (2020, June 15). COVID-19 Lockdown. Rise in domestic violence, police apathy. The Hindu. Retrieved from https://www.thehindu.com/news/national/covid-19-lockdown-spike-in-domestic-violence-says-ncw/article31238659.ece.

CRISIL (2020). Quickonomics: The one bright spot in the economy. CRISIL, An S&P Global Company. Retrieved from https://www.crisil.com/en/home/our-analysis/views-and-commentaries/2020/06/the-one-bright-spot-in-the-economy.html

Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. (2020). Fear of COVID 2019: First suicidal case in India!. *Asian Journal of Psychiatry*. 49:101989.

Hossain, M. M., Purohit, N., Sharma, R., Bhattacharya, S., McKyer, E. L. J., & Ma, P. (2020). Suicide of a farmer amid COVID-19 in India: Perspectives on social determinants of suicidal behavior and prevention strategies. https://doi.org/10.31235/osf.io/ekam3.

Li, L. Z., & Wang, S. (2020). Prevalence and predictors of general psychiatric disorders and loneliness during COVID-19 in the United Kingdom. *Psychiatry Research, 291*, 113267.

Ministry of Health and Family Welfare. (2021). COVID-19 INDIA. Retrieved from https://www.mohfw.gov.in/

Rodricks, Zita. (2021, July 12). Covid-19 and its Impact on education system. The Times of India. Retrived from https://timesofindia.indiatimes.com/readersblog/zita-janice/covid-19-and-its-impact-on-education-system-35076/

Singh, B.P. (2020) Impact of COVID-19 on Rural Economy in India. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.3609973.

Singh, J., & Singh, J. (2020). Corona Virus and Its Impact on Society. *Electronic Research Journal of Social Sciences and Humanities, 2*, 168-172.

Trivedi, U., & Beniwal, V. (2020). World's Biggest Lockdown to Push 12 Million Into Extreme Poverty in India. Bloomberg. Retrieved from https://www.bloomberg.com/news/articles/2020-05-27/world-s-biggest lockdown-to-push-12-million-into-extreme-poverty

United Nations. (2020). Everyone included: Social impact of COVID-19. *United Nations, Department of Economic and Social Affairs*.

Uppal, P. (2020). Covid-19 will Lead to increased crime rates in India. *International Journal of Research-GRANTHAALAYAH, 8*(4), 72-78.

World Bank. (2020). Global Economic Prospects, June 2020.

World Heath Organization. (2021). Coronavirus (Covid-19) Dashboard. Retrieved from https://covid19.who.int/

Article

Humanity Fights Back: A Philanthropic Response to Covid-19

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.45-54
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Rajesh Jain
Industrialist & Philanthrope

Abstract

Corona has brought human beings to a juncture where the opposite faces of humanity can be seen. On the one hand, selfish people trying to grind their axes through rumours and black marketing, while on the other hand, the innumerable heart-warming examples of human love, sympathy and compassion have given new meaning to philanthropy. This global health emergency has changed a person's life in many ways, similarly, it has thrown new challenges to philanthropy.

Keywords: Philanthropic, Disaster, Humans, Compassion, Solidarity.

Corresponding author:
Rajesh Jain, Industrialist & Philanthrope

Numerous phenomena such as natural disasters and political conflicts have been instrumental in either the evolution or the annihilation of humans on the planet Earth. Among all, the intermittent outbursts of communicable diseases have had profound and long-lasting effect on societies and have worked in changing the direction of human progress. In ancient times, humans used to respond to pandemics and other illness in a superstitious manner. The lack of communication among the learned and unschooled left humanity more vulnerable in the past. The difference in the present scenario, when we are gasping from an unapparelled deadly Covid-19 pandemic, is that, now, humans have stepped into the era of science and technology and have the capabilities to find a research-based solution to contain any pandemic.

Covid-19 has indicated to humanity that every life on mother Earth is allied. In the present global era, the lives of the poorest and the richest are interconnected and interdependent. When a rich person can wear clothes prepared by a poor factory worker, eat organic food produced by a rustic farmer, get services from all kinds of housing support to maintain his/her super lavish life; s/he can catch contamination too from anyone and anywhere. Therefore, all divisions and categories are flimsy and illusionary. The lesson that humanity has learnt from coronavirus is that we can survive and thrive better in solidarity where cooperation and compassion are the only potent way out in hard times. The fact that the fight against Covid-19 is not specifically of an individual, a family, or a society but it is a battle of entire humanity has been understood by people now.

All national boundaries got blurred when India received generous philanthropic funding from all around the world during the ravaging second wave of Covid-19. Besides, the dedication and devotion of frontline workers have given a chance to people to come together and rise above all kinds of discrimination and fissiparous tendencies. The commendations and thanksgiving to frontline workers through lighting candles and beating thallies by the entire nation has been the signal of Indian solidarity to combat the vicious virus. The most remarkable thing about this harmony is that it is not constrained to a particular nation because a video made by someone who had recovered from Covid-19 may teach a lesson to someone else living in a far-flung area of any other country. The expert panel of WHO virologists addressing the queries internationally, the doctors of Indian origin serving and saving patients in the USA, masks and test kits prepared in Europe securing people in Asia are living examples of this. The research experience or wisdom from one part of any nation can help the people in other territories on the planet. This is the biggest strength of humans that they can communicate with one another irrespective of boundaries. Thanks to social media and its different platforms for empowering human communication where the doctors, scientists and researchers can share their life-saving wisdom with the click of a button.

Despite all applauds for our resilience and recovery, we cannot sneak away from the accountability of our negligent and irresponsible deeds throwing us all in such a dismal situation during the pandemic. Unfortunately, before the advent of Covid-19, while nations were busy shooting up the investments in armaments and other warfare machinery, the funding for science and research had taken a backseat. The collapse of the health care system during the Covid-19 upsurge even in developed countries like the USA was a very big slap on the face of the power-seekers. The coronavirus has taught the people that science and medical discoveries are the only saviour for humanity. India has also been taking big strides with its huge investment in powerful satellites and nuclear weapons. Nevertheless, even the most celebrated Mars and Moon missions could not be the alternate for the required medical facilities in the present emergency.

The patients dying in hospital because of the poor quality of medical care is the biggest question mark on so-called progress in the field of war machinery which cannot replace the infrastructure needed in healthcare and research: "As early as 2015, Bill Gates had foreseen that not missiles but microbes and viruses would pose the bigger danger to humanity. Instead of spending on military preparedness, he advocated spending on building a good response system using science and technology: spending on biotechnology to research on vaccines, collaboration across the globe between governments and philanthropists to build a global epidemic fund" (Sunder).

Service and sacrifice are ingrained in the ethics of Indian culture. If we look at our day, we serve our first morsel to the divine, first bread to the holy cow and our first meal prepared by newly reaped crops goes for birds and animals around. These Indian values of taking every living organism along even in a normal situation have been strengthened during the Covid-19 pandemic. The philanthropists have come forward in multiple ways. It is not only about giving money but the initiatives such as food distribution, arrangement of shelter and other such little but impactful reinforcements have breathed life into the destitute and despondent.

Philanthropy and Covid-19 Crisis:

Philanthropic actions can act as a catalyst in times of crisis. The most remarkable difference they can make in society is by filling the gap in services left by the public and private sectors. They are free players having the most flexible structure as neither have they any governmental restrictions nor do they work for financial gains. Traditional philanthropies used to work on long-term plans at a steady speed, but nowadays, drastic times demand proactive strategies and super swift implementation. Covid-19 has made philanthropies to amplify their efforts and resources. Earlier, they used to have longstanding aims for the resources they could very well anticipate, but now, because of the sudden unmet and

enhanced needs of people, they have to act proactively with not much preparation. They find it hard to continue financial funding due to the economic uncertainty of present times because many donors and contributors are stepping back as a result of the economic backlash they had to face during lockdown. Moreover, these organisations have to keep their fundraising events at a halt due to the complete lockdown. For personal as well as public safety reasons, they cannot move out in gatherings to convince the people to contribute. Another challenge that philanthropies have to face is the shortage of the required workforce. While many of their existing volunteers have to sit back because of age issues or underlining diseases, it is very difficult to find supplementary staff as people are too scared to step out of their houses to volunteer.

In India, most predominantly, the workers in informal sectors have been disastrously affected. They had to face the scarcity of food, drinkable water, shelter and other basic needs and services. The most important attention-drawing fact about the Covid-19 lockdown in India has been the plight of migrant workers. Numberless workers heading towards their home without food and healthcare have been a wake-up call for the government. The episodes of their manhandling by the police to retain them outside the borders of their home states sought attention and criticism on the international level. It calls for future reformation either in the working conditions of migrants or generating employment at the local level so that such huge number of people may not have to leave their homes to work under uncertain and unsympathetic conditions.

Seasonal or complete unemployment is not a lockdown issue only. The situation is predicted to be more disastrous and terrifying in post-covid times, as "In India itself, between 19-43 per cent of micro, small, and medium enterprises (MSMEs)-the sector which is responsible for 90 per cent of jobs in India-may shut down"(Khanna). Migrant workers who had returned home hungry and vulnerable to infection are the one face of the coin, the other is equally heartrending as Covid-19 has brought to light the inherent gulf between the rich and the poor, the privileged and the underprivileged. Therefore, this is the bitter truth that have-nots have to pay the heavy price for any disaster be it political, economic or natural. In Covid-19 case as well, the most vulnerable and disenfranchised population had to bear the brunt more than the other sections of society. Apart from the migrant workers, the aged people, orphan children, minorities, people with disabilities and slum dwellers had to face other kinds of violence too along with the tragedy of Covid-19.

Many philanthropists tried to act as an intervention in this situation. Many corporations and organisation also extended their help via food, clothing, medicine, and temporary shelter. Nevertheless, these temporary, though necessary, quick fix measures cannot uproot the pestering evil of acute unemployment in many states of India. Certainly, the government

will do its bit; yet, philanthropies will have to play a decisive and fruitful role by engaging in long term projects to tackle such problems.

In 1918, the Spanish Influenza Virus played similar havoc with the lives of people - especially in Europe and the USA. The death toll was alarming particularly swallowing the lives of young people. It was not only the flu that the people were fighting with, but the ongoing World War I at that time was taking its toll on humanity and nature. In such a situation there were motivating instances of scientific discoveries and resilience against death and decay. The philanthropists enthused life in humanity. Altruists like Rockefeller and John Hopkins in the USA played a pivotal role in transforming American health infrastructure. Therefore, philanthropy has the power to protect and preserve humanity and human values in horrid times. Now, the current generation can take a leaf from legends like Rockefeller and others and can churn out similar advantages from Covid-19. Besides, an individual can help with the active use of social media where one can spread the word about the people who are contributing just to motivate others or can help those who are in need by sharing helpful information one has.

A glimpse of our institution's trajectory so far:

If I talk about the current pandemic scenario, I think, there is a lack of knowledge among people about the present situation and ways to handle this. We are certified with ISO 9001, ISO 26000, AS 9100, ISO 14001 & ISO 45001. Our campus is a green building and it is in our DNA to keep our surroundings clean and hygienic. We have been fogging and sanitizing our whole campus for almost 15 years. In addition to this, we started thermal scanning last year.

In the year 2020, during February and March, I started to speak about the covid precautions when I used to go to social events. I also had meetings with all social organisations, including Deputy Commissioner Sh. RS Verma and Dr Dhruv Chaudhary with the objective as to what should be our action plan to save ourselves from Covid-19. After one week of lockdown, we started our factory. As we serve 19 ventilators companies and medical equipment manufacturers so we come under the 'essential items' category. We have followed all Covid-19 SOP strictly on our campus like social distancing, masking, hand washing, PPE kits and thermal scanning. We have a medical clinic also with a doctor at our campus. The CMO himself came along with his team to see our precautionary measures and I am glad to share that he was very much satisfied with our work.

Last year, a Coordination Committee was formed by the Deputy Commissioner along with several members from different social organizations. I was the 'Patron' and Manjul Paliwal was the 'Coordinator' to that committee. The key objective of the committee was food distribution and the central message was: 'No one should be hungry. Social organisations

like Sati Bhai Sai Dass, Hari Om Seva Dal and Jan Seva Sansthan, Rotary Club, Hakikat Nagar Welfare Society, Baba Banda Bahadur Charitable Trust (Rohtak), Multi-Purpose Cooperative Society worked tirelessly during the pandemic crisis. We distributed 30,000 meals every day along with milk distribution. Chapati Making machines were donated to Sati Bhai Sai Dass Seva Dal as well. These social organizations and the Civil Hospital team have done their job very well. They have shown an exemplary commitment and unflinching dedication towards needy people, being available24X7 to serve humanity.

An X-Ray machine at Swami Balakpuri Charitable Dispensary was installed by our concern in May 2020 and one RT PCR testing machine at Civil Hospital, Rohtak in June 2020. We also helped in the renovation of the Electric Crematorium at Ram Bagh, Rohtak. In November 2020, when the Covaxin vaccination trial started, I was the first one to come forward in phase 2, but the doctor did not consider me due to my age factor. Yet, later on, I was the first one who took the first trial vaccination in phase 3 in Rohtak city. We also supported PGIMS, Rohtak and 250 people from our company got vaccinated during 3rd phase of the vaccination trial. We also initiated a meeting with various social organisations along with PGI and Civil Hospital doctors which led to the acceleration of vaccination as approximately 40,000 vaccinations were done in just 15 days. Moreover, we ran our vaccination camp for more than 2 weeks at BP Jain Development Centre, Delhi Bypass, Rohtak.

We adopted 200 beds at Jan Seva Covid Centre, Rohtak and post covid centre by Hari Om Seva Dal. We have given Chapati Making Machine to PGIMS, Rohtak in April 2021 along with contributing to PM and CM care funds.

During the second wave in April 2021, a new civil society along with District. Administration, PGI and civil hospital was formed and the author was 'Sanrakshak'(guardian) of that committee.

We organized an online meeting on Zoom with all private covid hospitals, paediatrics doctors from Rohtak, PGI, Civil Hospital, senior administration of IMA(Rohtak), school administrations, and Inner Wheel Club, Lion's club and Rotary Club. The objective of the meeting was "How do we handle the second wave and what further infrastructure and precautions are required for the third wave". We also arranged another meeting with all ENTs and Eye specialist doctors on the Black Fungus precautionary measures. We have also made many other collective groups like Social Leaders, Vaccination awareness, Yoga, Distt. Administration Group, Nagar Nikaye, Mano-vigyanik, Aushdhi- Salaahkaar, MLA's group and so on.

We are active in spreading the message and intensifying awareness activities about Covid-19 and Black Fungus. The author is in regular touch with the District Administration and

the CMO. We all are trying our best to keep our people safe and healthy. We are going to open help desks at BP Jain Development Centre, Hari Om Seva Dal and at all different places in the city to promote State government and Central government schemes (for Covid-19 and other schemes). I think everyone should adopt this new normal where our precautions and vaccination can be our only safeguards.

I have been telling people that we should aim at 70% vaccination, people who are eager to go around and go outside to socialize. Only then can we celebrate our first festival on 15th August, our Independence Day and then can we celebrate Diwali with full lightening and good vibes instead of Black Diwali. Hope all will be safe very soon.

Envisioning Philanthropies in Post-Pandemic World:

Pandemics have always surfaced like a double-edged sword. On the one hand, they have taken the lives of millions wiping out a considerable number of population, and on the other hand, they have also propelled societies to accelerate inventions and innovations particularly resulting in well-upgraded health infrastructure, strong economic models and appropriate political systems. Whenever humans have come face to face with epidemics and pandemics, they have bounced back very powerfully with reframed and restructured lifestyles. The pandemics like Black Death, Swine Flu, Spanish Flu, Ebola, Zika have transformed humanity to a great extent.

Covid crisis has prepared the ground for future philanthropists to specify the potential areas they want to work on so that the devastating effects of future tragedies could be minimised or neutralized. The most important sector we need to improve upon is health. Despite experiencing loopholes in our health system in the first wave and having an idea of incumbency of the second wave, our health system could not sustain, or cater to growing numbers leading to many deaths which could have been averted. Pinpointing the exigency of an enhanced health system, Anurag Behar, CEO, Azim Premji Foundation propounds that, "There is no single area to focus on, but the pandemic has made clear that we cannot become an even remotely good society, strong economy or vibrant democracy unless we have a sound public health system. That should be a big priority" (Kadakia).

Having flexible structure, philanthropies can creatively surmount massive social changes that too on humanitarian grounds. Not only structural adaptability but structural changes also for meeting the need of urgent situations can work wonders for philanthropies. It needs a departure from traditional processes. Each penny should be used to bring about impactful improvement in every human's life. Meaningful collaboration with key government stakeholders for systematic change is also the need of the hour. Philanthropists have turned out to be covid warriors through their commitment and passion as the covid crisis has inculcated the culture of philanthropy in all, irrespective of age, caste, colour and class.

Another area philanthropy can contribute effectively and constructively, which may prove to be a game-changer, is vaccination infrastructure. Philanthropic organizations/ individuals can bridge the gap in vaccination access. They can work for awareness campaign and delivery of vaccine at required places in a swift manner. True to its nature, the virus does not make a difference, but humans do. Therefore, more than a health issue, Covid-19 has brought to light so many inequalities, injustice and mismanagement at different fronts of our nation's life. Along with health, education is the most promising area in which philanthropies can invest. Education will act as a panacea wiping out the evils like unemployment, superstitions, corruption, inequality and injustice. The citizenry empowered with equity and justice would be able to fight back more effectively with future epidemics and pandemics.

Philanthropic support should not end with the relief in covid infections. The effort should be to continue with more resilient strategies even when life gets back to normal and people get back to their work after lockdown. The culture of compassion and caring should not be just grasping at straws. Philanthropy should not be just the attribute of the super-rich. It should become the inherent quality of every individual, family, community and society, because "Today humanity faces an acute crisis not only due to the coronavirus but also due to the lack of trust between humans. To defeat an epidemic, people need to trust scientific experts, citizens need to trust public authorities, and countries need to trust each other" (Harari).

In this way, the post-covid society will encounter a new breed of humans with different value system where people will start coming out of complacency and get ready to sacrifice their comfort and desires for the common good of the society. The future belongs to the nations that will overcome the humbug of 'we' and 'our' only and will welcome the world with a new kind of solidarity without any boundaries. In India, we have been through two waves, the second one being more massive and deadly. Nevertheless, this is not the end. This virus is like the different heads of Ravan, when you destroy one the other head appears to fight back. But, as Ramayan has the message of victory of love over hatred, sacrifice over selfishness, similarly, in this corona war too, humanity will win over the ominous and life over death.

References

Harari, Yuval Noah. "In the Battle Against Coronavirus, Humanity Lacks Leadership." *Time*, 15 Mar. 2020, time.com/5803225/yuval-noah-harari-coronavirus-humanity-leadership/.

Kadakia and Mehta, Pankti. "Philanthropy and Covid-19: Who will be India's Rockefeller?" *Forbes India*, 24 Nov. 2020, www.forbesindia.com/article/heroes-philanthropy/philanthropy- and-covid19-who-will-be-indias-rockefeller/64447/1.

Khanna, Deepali. "A Guide for Philanthropists." IDR, 12 Aug. 2020, idronline.org/ a-guide-for-philanthropists/.

Sunder, Pushpa. "Philanthropy in the Time of Covid-19." *The Hindu Business* Line, 1 Apr. 2020. www.thehindubusinessline.com/opinion/philanthropy-in-the-time-of-covid-19/article31226041.ece

Article

Covid-19: An Eye-opener Pandemic

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.55-66
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Sunit Dhawan
Principal Correspondent, The Tribune

Abstract

As Covid-19 affected people and claimed lives across countries and continents, the media organizations across the world gave extensive coverage to the pandemic. During the first phase of the pandemic, the media coverage primarily focused on the number of 'positive' cases and the death toll being reported from various places. In the second phase, the media reported a space crunch at health facilities owing to a sudden upsurge in Covid-19 cases. Nonetheless, numerous pieces of misinformation, fabricated and frightening facts and cock-and-bull stories pertaining to the pandemic were propagated on the so-called 'social media' with impunity.

Keywords: Media, Crunch, Reporting, Misinformation, Circulation.

Corresponding author:
Sunit Dhawan, Principal Correspondent, *The Tribune*

Truth, they say, is stranger than fiction. Curiously, real-life happenings sometimes unfold exactly as depicted in a work of fiction created years ago in such a way that one wonders whether fiction can predict the future too. As the Covid-19 pandemic gripped the world towards the end of 2019 and the beginning of 2020, it seemed as if the sequence of events shown in *Contagion*, an American thriller movie made in 2011, were taking place years after its release. The film fictionalized the entire scenario, beginning with the possibility of the dissemination of the virus transmitted prolifically by the respiratory droplets and particles, the frantic efforts of the medical practitioners, researchers and public health officials to comprehend and contain the disease, the subsequent social disorder and confusion created by the pandemic, and the introduction of a vaccine to control its proliferation.

Looking retrospectively, one is reminded of a portentous movie entitled *Contagion* which premiered at the 68th Venice International Film Festival on September 3, 2011. It was released for public viewing on September 9, 2011 and was appreciated for its content, narration, dramatization and the performances. No one could have imagined how true it would turn out to be in the year 2019. The film was televised umpteen times recently as it seemed to foretell a situation which unfolded in a sinisterly similar manner in real life with even smallest details turning true. The film was based on the profuse spread of a contagious virus, much like the ongoing global pandemic of coronavirus disease 2019 (Covid-19), caused by severe acute respiratory syndrome (SARS-CoV-2).

Pandemics Prior to Covid-19:

Pandemics have been a recurrent condition in the history of humanity. If the term is to be explained, Pandemic is a disease with no boundaries, it is pan-universe, occurring in many continents, countries and various geographical and habitable locations. It impacts wider populace, regions and habitations. In comparison, an epidemic is a scourge which occurs within a geographical location. So when an epidemic takes the proportion of larger magnitude and engulfs a large number of areas in various corners of the globe, it becomes a problem that is grave and urgent. Though Covid-19 is not the only pandemic that has wreaked havoc with the lives of people and humanity has been stricken by pandemics since long., it has threatened and challenged all claims of technological and medical advancement that we can boast of.

Spanish Flu was detected in 1918 by the health professionals as a viral infection amongst the United States military. The virus was supposed to have jumped from birds to human beings. It was estimated that from January 1918 to December 1920, it infected nearly 500 million people, annihilating a large chunk of mankind. It has come to light that Severe acute respiratory syndrome (SARS) surfaced in 2002, being the first pandemic of the 21st century. Like Covid-19, SARS was also caused by a coronavirus, known as SARS-CoV and also

had its genesis in China. Yet another virus, H1N1 Swine Flu, spread rapidly in 2009 and took about 60 million people in its grip by April-2010.

Covid-19: Natural Disaster or Bioweapon?

Coronavirus disease was first identified in Wuhan (China) in December-2019. The World Health Organization (WHO) declared a Public Health Emergency of International Concern regarding Covid-19 on January 30, 2020, and later declared a pandemic on March 11, 2020. The gravity of the pandemic can be gauged from the fact that as per the official data compiled by the WHO, more than 176 million confirmed cases of Covid-19 and 3.8 million deaths were reported across the world as on June 15, 2021, making it one of the severest pandemics in history.

Ever since the emergence of Covid-19, several questions and speculations are being raised about how it all started. A debate rages regarding the origin of the Coronavirus - whether it originated from the wild life naturally or it is a bioweapon; whether it spread by itself, by mistake or in a deliberate attempt, and so on. Scientists and researchers across the globe have put their heads together to pinpoint the origin of the disease. The 'Global Study of Origins of SARS-CoV-2: China' part conducted by the Joint WHO-China Study recently failed to arrive at any definite conclusion.

Incidentally, the Wuhan Institute of Virology (WIV) - the focal point of all rumours - is located in the same city as the wet market (where animals are sold for meat), which is considered to be the origin of the virus. Tara Kartha, a Former Director at National Security Council Secretariat, in an article published in *The Print* observes:

> Scientists have since come out in support of the Wuhan lab, declaring that the virus came from natural sources. Yet, suspicions continue, given that Chinese secrecy and its hierarchical culture prevent the transparency that is needed and is often inevitable, in democracies. Second, there is the clout that China commands. The WHO seriously downplayed the coronavirus threat initially. As late as mid-January in 2020, the WHO was echoing the Chinese position that the virus was not contagious.. . . Alongside China, other powers will also have to finally end the idea of a biological war, and power up absolute adherence to the Biological and Toxin Weapons Convention, a treaty that bans a group of bioweapons.

Scientific Warnings:

It is not that we were not cautioned well in advance about the possibility of a pandemic, but it has become a tendency of nations and institutions to ignore such warnings until and unless these manifest themselves prolifically. Michael Specter, an Adjunct Professor of Bioengineering at Standford University, in an article named 'The Deadliest Virus' published

in the March 12, 2012 issue of *The New Yorker* observes that there are certain conditions to trigger the onset of any virus. Apart from its virulence, there is an unpredictability about the birth of a strain, its mutation and gradual weakening.

Specter has pointed out the cold and careless attitude of individuals and institutions involved in medical care and research. He alleges that: "With influenza viruses, speed matters. Vaccine-production methods have not changed substantially in sixty years, and it was months before a useful vaccine was widely available for the H1N1 pandemic of 2009". The times demand for intensive research on origination, transmission, and prevention of such pandemics in future as according to Spector such "research could guide us toward making more effective vaccines. None of these experiments is without risk, but one must also consider the risk of not carrying them out".

Symptoms, Severity, Transmission and Prevention of Covid-19:

As the nature of virus is rather stealthy and elusive, WHO and various countries had to revise their list of symptoms to watch out for. Fever, cough, body aches, loss of smell and taste were some of the commonly detected symptoms but many other allied problems were deciphered gradually, in a piecemeal manner. Whereas some patients had conspicuous signs of having been infected, others were asymptomatic carriers and potently more dangerous. Besides, factors of comorbidity further complicated the condition. Hence the elderly, people suffering from chronic diseases, those having any underlying medical issues were the worst victims. The severity of Covid-19 symptoms is highly variable, ranging from unnoticeable to life-threatening. The transmission of the virus was another conjectural issue. It was claimed that it spread through surfaces, aerosols, droplets and so on. Proximity, gatherings and crowding were listed as hot spots for aggravating the spread of the virus. Large scale fogging, mass sanitization, disinfectants and so on were used. People were advised to stay at home. All educational, recreational, religious, sports related, cultural and other places were shut with a mass lockdown.

Within the span of a year, familiarity with the way this virus behaves, has grown, thanks to the tireless efforts of researchers, scientists, medical professionals and many other Covid warriors who have not only handled the disaster professionally, but have also produced vaccines for possible immunity. Initially, social and physical distancing was enforced along with the use of masks, hand sanitizers, gloves and so on. But it was realized that a more reliable, technically and medically proven method was required, hence mass vaccination drive was initiated everywhere in the world. In a country of the proportion, magnitude and geographical variety of India, where a larger part of the population lives in agrarian areas, sometimes in far-flung hamlets, the vaccination drive has been a huge challenge. There cannot be a situation of perpetual lockdown. Life has to move, grow and progress. Viruses

and diseases cannot be allowed to stall our march of advancement. At the same time, indiscriminate and callous use of natural resources has to stop. The onus cannot be shifted to the developing countries of having polluted the environment. It is a collective lesson that humanity has learnt due to the spread of the virus. So vaccination is a step in the direction of victory of the human spirit as a collective endeavor. The efforts of our country are singularly laudable as not only has mass vaccination drive been taken up in the nooks and corners, added to it there are a variety of vaccines available for the people, two of which are fully indigenous.

Global Impact:

As Covid-19 is a pandemic, its impact has been felt all round the world. Nothing has been quite the same as before. Factories, shops, markets, institutions, organizations, events, travel and games - everything had to be halted. The economic impact was unfathomable, nearly as disastrous as the Great Depression of 1929. There has been mass migration of workforce, lockdown of small and big establishments, leading to worst kind of economic aftermath. Be it industrial production, agricultural disruption, unemployment - every strata of society has suffered gravely. The psychological and emotional trauma is difficult to quantify. With many deaths in and around one's vicinity, faith in the celestial powers has been eroded. Adding to the chaos, there has been rumor mongering, misinformation, one - upmanship by news channels and other myths generated by mass media. The expansionist tendencies of some of our neighboring countries and the simmering discontent amongst others, envious of India's steady growth chart, has made the entire scene murkier and seedier.

The Silver Lining:

Nonetheless, there have also been decreased emission of pollutants and greenhouse gases, resulting in clean air and clear water bodies. Automobile pollution dipped considerably as a large number of residents remained confined to their homes and worked from home instead of commuting to their workplaces. Industrial pollution also got reduced to a great extent as a large number of manufacturing units remained closed due to the unavailability of workers, transport services and dip in demand for goods. Though the industrial slump hit the economy, it also made the consumers, as well as manufacturers, reconsider their priorities.

Covid-19 in India:

In India, the emergence of the pandemic came to the fore in March-2020, with the country's Prime Minister Narendra Modi calling for a 14-hour 'Janata Curfew' from 7 a.m. to 9 p.m. on Sunday, March 22, 2020.While addressing the nation on June 19, 2020, the Prime Minister said, "Today, I am seeking one more support from every citizen. It is Janta Curfew

- a curfew for the people and imposed by people themselves". People were advised to stay at home and avoid public places in order to check the spread of the virus. It was the Prime Minister who made the appeal and sought national consensus and collaboration by one and all. Essential services like healthcare, police and media however were exempted from the multifarious restrictions. As it was a national level lockdown, it was rightly called the Janata Curfew which was followed by a nationwide lockdown for 21 days, further increased by weeks and months. All through, the state and central governments tried to placate and allay fears. There were customary gestures such as lighting of candles, beating of thali and so on to bolster faith in the hapless humanity. So along with scientific and official measures, emotional and psychological succor was also provided.

Nation at Standstill:

Trains ferrying passengers across the country came to a grinding halt as the Indian Railways suspended passenger operations. This was perhaps for the first time in 167 years that India's rail network was suspended, although there was a period strike in 1974.The national rail operator, however, maintained its freight operations to transport essential goods. As a unique gesture of caring and concern, the Indian Railways converted rail coaches into isolation wards for the Covid-19 patients. Meanwhile, the 21-day lockdown announced on March 24, 2020, was gradually extended to May 31, 2020, by the National Disaster Management Authority.

Effects on Economy:

One of the worst hit sectors is surely the economic sector which saw a steep slump, in an already weak economic scene with a disturbing slowdown and a fall in the GDP growth rate from 8.2% in January-March 2018 to 3.1% in January-March 2020. Whereas some trends showed it in negative, the worst was yet to come. The estimates for April-June 2020 showed the GDP growth rate as -23.9%, which was the lowest ever mark in the history of the country. Nearly all major sectors, be it foreign trade, indigenous manufacturing, construction, trade and hotel industry and even medical tourism saw a decline. With mass exodus of labour force to their rural habitat, industries had to be shut down, even essential goods were scarce and livelihood loss for the unskilled workers only compounded the issues.

Woes of Migrants:

Any disaster hits the underprivileged the most. Daily wagers, maids, drivers, factory workers and unskilled labour was not only rendered jobless and resource less but also homeless and hapless. The confusion created by concocted stories, magnifying and exaggerating the situation, found a field day with the simple and ignorant masses. As production units were

shut down, there was consequent lack of monetary resources and no rent could be paid for the lodging. There was the fear and uncertainty of the unknown which induced mass exit from cities to native places in an array of busses, run by the government and the private parties. There was assurance given by state governments that ration and financial help would be provided. But swayed by whatever went around, workers migrated to their native places by whichever mode they could procure. There were deaths due to accidents, overcrowding of buses, hunger and exhaustion and more. In its report to the Supreme Court of India on March 31, the Union Government stated that "the migrant workers, apprehensive about their survival, moved in the panic created by 'fake' news that the lockdown would last for more than three months." All this proves that along with a medical emergency, Covid19 generated social insecurity and an existentialist crisis. It has been a problem beyond number of casualties, it in fact is a chilling reminder of how puny and fragile humans are despite their tall claims of being God's best creation.

Lifting of Lockdown:

Eventually, on May 30, 2020, it was announced that the lockdown restrictions would be lifted, while the ongoing lockdown would be extended till June 30 only for the containment zones. Services were resumed in a phased manner with effect from June 8, 2020. It was termed as 'Unlock 1.0'.Then, with more ease in restrictions, Unlock 2.0 was announced for the period of July 1 to 31. Likewise, Unlock 3.0 was announced for August, Unlock 4.0 for September, Unlock 5.0 for October, Unlock 6.0 for November and Unlock 7.0 for the month of December-2020.

The Second Wave:

India launched its Covid-19 vaccination drive from January 16, 2021. While the initial focus was on healthcare workers, the other frontline warriors, senior citizens, persons with co-morbidities, those above 45 years of age and eventually all adults were covered under the campaign. The number of Covid cases also started falling in India and touched a record low of around 9,100 cases on January 26, the country's Republic Day. In February, 2021, the average daily new case count for India fell below 9,000. However, that reduction in the number of Covid cases turned out to be the proverbial lull before the storm, as the number of Covid patients started to increase rapidly thereafter.

Scramble for Medical Care:

The number and severity shot up to such an extent in March, April and May 2021, that an acute shortage of oxygen and hospital beds was witnessed and a large number of patients died due to lack of the requisite medical facilities. Almost all hospitals were jam-packed and even critically ill patients were denied admission owing to the unavailability of beds

and/or oxygen. While the affluent and influential patients managed to get well-equipped luxury suites and prompt medical care at high-end hospitals, the commoners were doomed to scurry between hospitals and medical stores to save themselves and their near and dear ones.

The death of Praveen Kumar, who cremated the bodies of nearly 300 Covid patients, due to denial of timely medical aid at Hisar district headquarters in Haryana, is a case in point. Praveen, who was the president of the union of sanitation workers at Hisar Municipal Corporation, lit the pyres of so many Covid patients. But when he got infected with Covid and gasped for oxygen, his companions had to run around for three hours to get him admitted to a private hospital. Ultimately, he succumbed to the infection.

Mayhem in May:

T.S. Eliot, the famous Modern poet has claimed in his poem "The Wasteland "April is the cruellest month, breeding Lilacs out of the dead land, mixing Memory and desire…" In these exacting times, it was May which was the cruellest month due to steep rise in numbers of the infected as well as the fatalities. With figures showing an upward trend all through the month, it was clearly the second wave which had engulfed the country and was also showing peak occurrences of infections. The statistics is dismal. On May 6, the country reported the largest number of infected cases in the world with 4,12,262 new confirmed cases in a single day. India officially crossed the 21 million mark of total confirmed cases, and 3,980 deaths on that day. On May 7, a new record high for daily confirmed Covid-19 cases with 4,14,188 new patients and 3,915 deaths was created. On May 8, the number of deaths was a whopping 4,187. There were 4,01,078 new confirmed cases, marking the third consecutive day of 400,000 or more cases. The first week of May was a nightmare with number of morbidities and mortalities being staggeringly high, with more than 2.7 infected and nearly 26,000 deaths. The number of dead was alarmingly high creating shortage of proper cremation facilities. It took quite some time for the active cases to decline and the recovery rate to increase. Alongside stringent measures, vaccination drive was nearly a gift of life, offered first to the citizens above 45 years of age and then for all adults.

Helpless amidst helplines:

Residents in general and even doctors and administrators felt helpless as the Covid-19 cases mounted with every passing day. Even though the government functionaries launched numerous helplines for the Covid-19 patients, their families and people in general, these helplines proved ineffective in providing the desired help in the event of need. A considerable number of people, including under-treatment as well as recovered Covid-19 patients, suffered from anxiety, panic attacks, depression and other such mental health issues. The feeling of

helplessness reigned for several weeks while the hospitals were jampacked, patients gasping for oxygen and people getting paranoid, thinking how they would manage to get hospital beds, oxygen and medicines in case they or someone in their family got infected.

Influx of Black Fungus cases:

As the second wave of Covid-19 abated, the cases of mucor mycosis or black fungus started coming up in considerable numbers. The surge in cases of mucor mycosis, coupled with the acute shortage of liposomal Amphotericin-B injectable drug, which is regarded as a good drug to cure the infection, posed another challenge to the medical fraternity. Medical specialists maintain that the cases of mucor mycosis were reported earlier too, but these were rare. A sudden influx was recorded in the number of patients during the prevalence of the Covid-19 pandemic, particularly during the second wave.

Black-marketing of drugs:

An acute shortage of drugs used for the treatment of Covid19 and mucor mycosis was also witnessed during the second wave of the pandemic and surfacing of mucor mycosis cases. Many businessmen, pharmaceutical workers and middlemen indulged in black-marketing of these drugs in a bid to make money from the family members of critically ill patients. While several such rogues were nabbed and put behind the bars, many others got away after minting huge amounts of money as a majority of cases went unreported and unnoticed.

Impact on education:

The pandemic also took its toll on education, with schools being closed to check the spread of Coronavirus. A majority of schools switched over to online teaching. A high-level ministerial meeting of UNESCO held in March-2021 highlighted that, "One year into the COVID-19 pandemic, close to half the world's students are still affected by partial or full school closures, and over 100 million additional children will fall below the minimum proficiency level in reading as a result of the health crisis. Prioritizing education recovery is crucial to avoid a generational catastrophe". Schools and students in India witnessed an unprecedented academic session, with the Central Board exams of Classes X and XII being cancelled by the Union Government.

Human response to pandemic:

A wide spectrum of human behaviour was also witnessed, with a majority of private hospitals treating the Covid-19 situation as an opportunity to improve their financial health, unscrupulous elements indulging in manufacturing of spurious medicines and black-marketing of medical oxygen and drugs required for treatment of Covid and Mucor mycosis (black fungus) infections and ambulance operators and cabbies making the moolah by fleecing

even the poor. On the other hand, several genuine philanthropists also rose to the occasion and helped the patients and people in need by providing oxygen cylinders and concentrators free of cost, organizing blood donation camps, serving food and supplying ration material to the needy and in numerous other ways, keeping one's faith in humanity alive.

Voluntary organisations established Covid-care centres, gurdwaras organized oxygen langars and Central Armed Forces like the ITBP set up large temporary hospitals to tackle the medical crisis. It was generally observed that the instincts of fear and greed overshadowed qualities like grief, love, compassion and magnanimity. In nutshell, it can be stated that the Covid-19 pandemic did not break any 'system' - be it economy, healthcare services, human relationships, principles or moral values, but it did expose the systems which were already broken.

Media coverage of pandemic:

As Covid-19 affected people and claimed lives across countries and continents, the media organizations across the world gave extensive coverage to the pandemic. During the first phase of the pandemic, the media coverage primarily focused on the number of 'positive' cases and the death toll being reported from various places. The plight of the poor, the efforts and constraints of the healthcare professionals and other Covid warriors, the conduct of human trials of Covid-19 vaccines, the violations of Covid-19 protocol and actions taken thereupon, the ambiguities and lapses in the functioning of the government administration and casual approach of people, in general, were also highlighted.

In the second phase, the media reported a space crunch at health facilities owing to a sudden upsurge in Covid-19 cases, shortage of hospital beds and oxygen, black-marketing of medicines like Remdesivir and inadequate arrangements in dealing with cases of black fungus. The large number of casualties caused by Covid-19 made the headlines, and so did the initial reluctance and eventual scramble for Covid-19 vaccines. The media was also criticized for creating a fear psychosis among the people by over-playing and sensationalizing the news reports related to Covid-19.

Nonetheless, numerous pieces of misinformation, fabricated and frightening facts and cock-and-bull stories pertaining to the pandemic were propagated on the so-called 'social media' with impunity. People forwarded unverified posts and messages on various social media platforms, creating panic amongst the already anxious people. Ultimately, people learnt not to believe the bits of information being circulated on social media and take such things with a pinch of salt.

Lessons for humankind:

It is rightly said that a bad experience is a good teacher. The Covid-19 pandemic, which

shook the world by making billions sick and millions die, affected nearly all of us directly or indirectly, in some way or the other. The first thing it has taught us is to redefine our priorities. Maintaining a healthy lifestyle for the well-being of ourselves and our family members should be our topmost consideration. Maintaining our integrity by doing our work sincerely and honestly, staying grateful and connected with Nature through spirituality and extending a helping hand to those who are less privileged than us, will ensure that we lead a meaningful life, synergistically.

We should also stay in touch with our near and dear ones and be ready to help them in case of need. We should also be financially prepared and socially well-connected to meet any eventuality. We should strive to plant more trees and do whatever it takes to reduce environmental pollution. Nature should be respected and taken care of as it is vital for the survival of all living beings. It is due to our reckless use and over-exploitation of natural resources that the natural season cycle got disturbed, the ozone layer was damaged, global warming accelerated and the level of underground water went down at an alarming pace.

These challenges have to be dealt with as a collective social responsibility in the larger interest. On part of the governments, strict and effective measures need to be taken to revive the economy and strengthen the healthcare infrastructure. The owners of private hospitals, medical professionals and those associated with the pharmaceutical sector also need to do some serious introspection for obvious reasons. All in all, the pandemic has given us an opportunity to stop and think what we do, and then move forward with a clear vision and firm resolve to make Planet Earth a better place for the coming generations.

References

Eliot, T.S. *The Wasteland and Other Poems*. Faber and Faber, 1972.

Kartha, Tara. "Is Covid-19 a Chinese Weapon or an Accident? Either Way, World Must Stop Playing in Bio Labs." *The Print*, 3 Apr. 2020, theprint.in/opinion/covid-19-a-chinese-weapon-or-an-accident-world-must-stop-playing-in-bio-labs/394160/.

Specter, Michael. "The Deadliest Virus." *The New Yorker*, 4 Mar. 2020, www.newyorker.com/magazine/2012/03/12/the-deadliest-virus.

UNESCO. "Education: From Disruption to Recovery." en.unesco.org/covid19/educationresponse. Accessed 20 June 2021.

"What is 'Janta Curfew' and How It will Play Out." *Hindustan Times*, 20 Mar. 2020, www.Hindustantimes.com/india-news/what-is-janta-curfew-and-how-it-will-be-implemented/story-YI9fiXNtPpNpzoaXOAELhM.html

Article

Ruination, Resilience, Revival: An Academic Perspective on Pandemic Management

Maharshi Dayanand University
Research Journal ARTS
2020, Vol. 19 (2) pp.67-76
ISSN 0972-706X

http://www.mdu.ac.in/Journals/about.html

Sonia
Assistant Professor, Dept. of English, Hindu College, Sonepat

Abstract

Change is fundamental to nature, but natural changes are always gradual and easy to adapt. Whenever changes have been robust, they have put humanity in quandary and have resulted in cataclysmic consequences as well. Covid-19 has forced the people to revamp their lives at all fronts including education. With zero movements, digital technology has become essential for connectivity, communication, business, healthcare, with education being no exception. Online mode of learning which has been on the platter for long has become a necessity now. Covid-19 has propelled a sudden shift to the online teaching-learning model. Unluckily, many institutions before the pandemic had no prior experience of providing online education which put off the natural speed of learning. This article attempts to articulate the travails and triumphs of academia in the wake of the Covid-19 pandemic with special reference to Higher Education Institutions (HEIs).

Keywords: Ruination, Resilience, Education, Students, Online.

Corresponding author:
Dr Sonia, Assistant Professor, Dept. of English, Hindu College, Sonepat
Email: soniaphougat8@gmail.com

From stringent lockdown bringing life to a sudden standstill, to mudslinging by politicians on one another; from migrant workers walking towards their home hundreds of miles away, to people shooing away each other; from black marketing of medical drugs to political rallies under the threat of Covid-19; from patients gasping for oxygen, to young kids losing their parents untimely - what hasn't been witnessed by the people of India in the year 2020. Amidst the second wave of Covid-19, there was shortage of vaccines. Stories of hospitals running out of oxygen and overburdened doctors and nurses crying and requesting people to be responsible citizens moved our hearts. People caught infection and died at home without even getting tested. Their deaths may remain unrecorded and not even featured in statistics. With all this, when one looks back on the last fourteen months in human destiny, one visualizes turbulence, tension, terror, transition and transformation.

Covid-19 shook the very soul of humanity. It seems like a storyline of some horror movie from Hollywood or a plot of some sci-fi but, sadly, this is the ugly reality we have been a witness to. Ironically, all this happened when humans claimed to have excelled in technology, when DNA mixing, robotic operations and exploration of the universe for life alternatives are at their peak. Nevertheless, this tiny speck of virus has opened the eyes of narcissist humans and has again proved the transience of human life on the earth. Humans believed that modern technology and healthcare systems are sufficient and advanced. But the virus has given a lesson to humans that, false borders that we have put up, have little value as Corona does not need a passport, and can dupe digital surveillance.

Amid this inscrutable devastation across the globe, whatever we do, it is for sure that life can never be the same as before. Even though the pandemic is a Grey Swan, as such pandemic has emerged not the first time and it would not be the last. Hence, we need to prepare for the true Black Swan which might be right around if humans do not rein in their voracious greed.

What Befell HEIs (Higher Education Institutions)?

Covid -19 has affected approximately 1.6 billion students in more than 200 countries. Shutting of schools, higher education institutions and other learning spaces have impinged on the study of 94% of the world's students (Pokhrel and Chhetri 133). In India alone, 320 million learners had to bear the brunt of pandemic lockdown (Jena 12582). If we look at the higher educational institutions in India, they are majorly in private and public sectors. The educational shift, from onsite to online teaching, in a private institution was more spontaneous and swifter due to good infrastructure, whereas, in public sector institutions, the lack of infrastructure put the academicians to task and their creativity and adaptability was their only safeguard. Despite having no magic bullet, experts and stakeholders from all academic disciplines tried to cope up and keep their spirits high to combat this unseen

enemy. It compelled administrators, academicians and students to initiate sweeping changes in their educational approach.

The Anecdotes of Academicians:

Academic Institutions were hugely and adversely affected as teaching was shifted online, assessment activities got disrupted, extra-curricular activities and ceremonial events were cancelled. In addition, there was an imminent disruption in academic and research activities including face-to-face conferences and conventions. Besides these challenges, academicians had to pull their weight around engaging socially and professionally with students and colleagues.

The academicians had to go beyond the call of duty preparing online content, taking classes, counselling students and creating a state of harmony amid quandary. Now, in academics, the challenges have not remained restricted to academic activities only, the academicians are supposed to address mental health, personality development, communication skills and other areas as well. For this, they had to organise interactive online classes targeting to address issues like self-motivation, stress, anxiety, isolation and depression among the students including follow up sessions to get suggestions and opinions from students for effective interventions in future.

Teachers worked round the clock not only to facilitate the students with teaching material but also to make them access that material appropriately and get benefited from it. Their work being increased manifold, the teachers did not remain only teachers, they became trainers too. They had to convince the students that social distancing did not mean social isolation. A large number of aged teachers deserve applaud for their zeal in learning the nitty-gritty of new modes of teaching despite health concerns including techno-stress and time crunch. On World Teachers' Day 2020, David Edwards, General Secretary, Education International, Audrey Azoulay, Director-General of UNESCO and Henrietta Fore, Executive Director, UNICEF issued a joint statement. Hailing how academicians had stood firm to contribute their bit in the global fight against Covid-19, professionally, mentally and socially, they acknowledged that, "In this crisis, teachers have shown, as they have done so often, great leadership and innovation in ensuring that #LearningNeverStops, that no learner is left behind. Around the world, they have worked individually and collectively to find solutions and create new learning environments for their students to allow education to continue" (Azzi-huck and Shamis).

When teachers have to wear many hats as a teacher, trainer, technician, counsellor, mentor, imagine the teachers teaching from home while caring for their own tiny tots without any housekeeping support during lockdown. The additional challenges like house responsibilities, home-schooling of children have invariably impacted the creativity of teachers due to

increased exhaustion level. Still, expectations from the teachers have made their battle tougher. If a student needs mental support, a teacher is always there, but the need for psychological support by an academician has not been addressed. The teachers are no less than the frontline workers. From food distribution among the underprivileged to managing isolation wards; they locked horns with the unknown outside the campuses as well. But the death of over 1600 teachers in Uttar Pradesh Panchayat Election duties raises serious questions on the safety arrangement for teachers.

The bitter truth this virus has told us is that teachers may be wonderfully adaptable, but not inexhaustible; technology can be a support but cannot be a supplement; education can focus on classroom learning, but curriculum completion cannot be the only goal. Despite all this, academia is the only hope one can look up to for silver lining. Therefore, flexibility in the working hours and syllabus completion, encouragement and appreciation for even small achievements, motivation for self-care, safe working conditions, advanced technical exposure, enhanced infrastructure must be provided to the academicians for better balancing of their personal and professional lives.

Challenges for Policymakers and Administrators:

The educational leaders had to face tough time and step up their game for managing institutions during the pandemic. Arrangement of necessary resources for shifting from onsite to online mode without much loss to students, unstable workforce due to infection among the faculty, decisions on student's exam or promotion, the responsibility of reaching out to the last student of the institution, keeping up the faith of students in the stakeholders, stopping mid-year dropouts, spreading social awareness against delusive media hoax along with assuring equity and social justice were fire tests for academic leaders in the ongoing uncertainty.

Moreover, if we talk about the National Education Policy-2020 which aspires to shoot up the higher education enrolment of students from 26 % to 50% by 2035, this pandemic has made this challenge tougher and herculean as parents' job loss in many families may lead to more dropouts after schools. The challenge for administrators in higher education is not only continuing the education of enrolled students but also ensuring the further enrolment of fresh ones. The drop in new enrolment will also add to a financial crisis for HEIs.

In this scenario, administrators can get benefitted from the teachers' exposure and experience by involving them more in the decision-making processes. In the present global health emergency, every teacher is a catalyst as safety of each is the safety of all. Therefore, the educational leaders need to work proactively in promoting vaccine trust and establishing supportive policies and practices that make getting vaccinated easy and convenient as much as possible. The goal should be to get the staff and students vaccinated before they

shift back to the offline mode of education.

Students' Side of the Story:

The poor students living in the remotest areas have been the hardest hit by the pandemic. Sadly, despite all exemplary effort by teachers, various marginal student groups have been deprived of education in lockdown. Future insecurity, financial hardship, poor internet connection in hinterlands, no laboratory practice for science, social science and engineering students and no communication skills, real-life experience, attendance worries have been some of the concerns plaguing students during the pandemic. Students are unable to mingle socially and cannot optimise their activities in student activity centres. It is a big jolt for those students who have always been engaged in extracurricular activities like sports and cultural events.

The most devastating effect of the pandemic has been on the higher research programs such as PhD where the fieldwork, extensive study, library visits, interviews and interaction are involved. It brought the activities involving fieldwork to a halt compelling the researcher to reimagine and rethink their research projects as the roadmap with which they started was not attainable in complete lockdown. The surveys show that during pandemic lockdown students have been more concerned about their career and future than their health.

The Ontology of Online Education:

The world of virtual learning is a new imperative. This onsite to online shift, though initiated as a makeshift transition, has evolved into the new normal resulting in distance learning from primary to research degree level. Online education has always been a good resort for academicians in the past as well, majorly due to natural disasters and political instability, but such a humongous calamity has never stricken the education system on such a colossal scale as it happened in the case of Covid-19.

The pandemic has pushed education several years ahead in respect of digital transition. The digital literacy of teachers, as well as students, would give students the chance of flexible learning which is the need of the hour. This fact cannot be denied that online education acted as an intervention in pandemic where students could be involved in extracurricular or hobby related sessions related to acquiring new skills to keep up their spirit. Another benefit of online education is to provide global access to learning to all strata of students. This produces equity of access to education for everyone.

Though online teaching and research have become the *new Mantra* of education in all educational institutions, this non-contact education is a bag of challenges along with opportunities. No academician or student can deny the fact that online platforms have their limitations too. We can conjure up quite vividly some of the very interesting and

informative lectures being ruined due to voice lagging, voice breaking, slide not moving properly and many more technical reasons. Such exasperating experiences not only spoil the spontaneous flow of insight from the speaker but also disengage the students from the knowledge they could get. Obviously, students feel less motivated while attending online classes because of a plethora of distractions available online as they can easily click on YouTube videos or can move to online games which seem more interesting substitute.

Hence, it has become a challenge for the teachers to make their classes even more interesting and refreshing than other online available sites and platforms for the students. The teachers who have been just the authority in the real-time classroom controlling every activity of students are only vocal moderators in virtual classes. The role of the teacher has become a role of instructor, interactive buddy, and entertainer who always has to have something very engrossing to offer. If a teacher fails to do that, s/he is done. Students are more technology savvy as they are techno-natives while the teachers are techno-migrants compelled to adapt to technology. The challenge for academicians is that along with learning technical tools, they are supposed to be very much creative to make the most of online education.

Moreover, lacking the warmth of physical interaction, digital learning poses challenges for a teacher to ensure real learning in a virtual classroom. UNESCO's International Commission on the Futures of Education has also shared its concerns about serious fallouts of online education: "Technology [is] not a panacea but a source of innovation and expanded potentials. . . . We must ensure that digitalization does not undermine privacy, free expression, informational self-determination or lead to abusive surveillance. It is an illusion to think that online learning is the way forward for all" (8). Therefore, besides privileges, problems of the online education sector call for its reinvention and reimagination.

Infodemic and Academia:

The inevitable penetration of social media in day to day life is instrumental in shaping subconscious minds as well. Many opportunists and unscrupulous individuals and groups are trying to mislead people by trending misnomers about the nature and treatment of Covid-19. So, various ideas have been floated on the social media. Such as the virus is a hoax and does not exist; it is just common cold or the illness and deaths are the outcomes of 5G network piloting taking a toll on health. This makes people confused and careless as they ignore personal hygiene, social distancing and masking meant for their well-being. Such infodemics have unleashed unfounded conspiracy theories serving the wicked and tricking the public for their vested reasons. These false instigators have used the pandemic for fanning the flames of communism and casteism.

In such taxing times, the academicians and researchers can employ their vision in forecasting

the effects of the pandemic on humanity along with probable solutions. Educationists can hold the beacon of interpreting scientific discoveries and data and can support health care system. The well-informed academicians teamed up with their aware students can bring change to the public response regarding this pandemic, especially amongst the student fraternity.

The Ride Ahead:

Talking about just challenges would be like standing too close to the elephant. Despite dangers and devastations, the pandemic created certain future opportunities as well. To put it in words of Arundhati Roy, the famous litterateur and social activist, Covid, "is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it." (Roy, TPP)

Higher Education Institutions are the hub of innovative ideas. Being a vehicle of change, they are genesis sites of innovation and creativity. They come up with new ways of looking at problems and challenges. Here too, the HEIs are supposed to fair through the Covid-19 ordeal via transformation and innovation. Interdisciplinarity may enthuse lifeblood in education where only the medical student should not be considered capable of dealing with such fights. Every discipline can contribute in its own unique way individually and also collaboratively. Medicine can help by researching new breakthrough; Psychology may support via mental health programs; Engineering and Architecture can talk about new tools; Arts can motivate citizens to churn their creativity.

Teachers have done a commendable job by transforming this sudden shift from offline to online mode of education, but that quick fix has been just to reduce students' sudden loss of learning. In this regard, teachers prepared online study material, assignment formats and other requisites without any advanced technical training. Nevertheless, the same cannot be continued as online education should not compromise the quality of learning. Therefore, ensuring proper training of teachers and the availability of ICT tools remains a prerequisite in many educational institutions.

The best outcome of online teaching-learning and its enhanced skills among teachers would bear fruit when the system returns to the traditional classes after Covid-19 wanes away. Online tools complement traditional face-to-face learning, not substitutes. Therefore, it may work wonders when both synchronous and asynchronous online teaching tools get integrated with a physical classroom. Moreover, the shifting of teaching content on online platforms will save time in face-to-face classrooms and those classes would be more productive with ample time for debate, discussion, query clarification and practice sessions

in the presence of efficient mentors.

Online education has ensured the accommodation of and access to the farthest and the poorest students as well. The enrichment of online content and strategic bifurcation of online and offline interaction would be the priorities of premier and proactive educational institutions. It will allow the educational institutions to touch upon the lives of countless students and they would also be able to churn out the monetary benefit from it. Hence, the management and smooth continuity of online teaching seem to become an integrated part of the strategic system in educational institutions.

Policymakers are supposed to show their vision in regulation and ethics with an agile and flexible system where they can think about different modes of teaching-learning perhaps through a partnership with technology providers. The government tried to make education accessible to the remote areas through dedicated TV channels for school children, but in the case of college students, such efforts have not been witnessed. Therefore, they can make the Telecom companies provide subsidised network plans so that the poor and unprivileged students can also be accommodated in this transition.

Undoubtedly, once the situation normalises, face to face classes will be resumed. Nevertheless, the Second Wave has proved true all medical claims that the course of Covid-19 is going to be cyclical. Therefore, consistent preparedness is the only way to combat this unseen enemy and minimize its effect. The post Corona scenario is a significant opportunity to build a more resilient and sustainable future. The best way of utilising the lockdown can be to sit, self-introspect, think, and reflect. History is witness to the times when great people have used such lockdown or isolation productively. For example, Mahatma Gandhi wrote his autobiography in 1932 in prison; Nehru penned down *Discovery of India*, and Veer Savarkar his books in jail. Similarly, Newton used his forced quarantine during the plague of 1616 to think about the theory of gravitation and Shakespeare wrote some of his seminal plays during Bubonic quarantine.

Even while the virus escalated, nature had a reboot unfolding the beautiful skylines, kaleidoscopic sunsets, bucolic serenity and an unadulterated chirping of the birds. There was a big chunk of the current generation which had not experienced what clear sky looked like or clean air felt like until the lockdown. This will become a point of no return, for now, a new line of environmentalists will emerge to fight for the environment that people deserve to live in. Besides, innumerable accounts of the triumph of collective compassion over self-indulgence, courage over fear, love over divisive malevolence have carved a niche amid terrifying tales of the pandemic. From a child of 6 to 96 years old stood out to do their bit. The pandemic contingency seems to have amplified a new heritage of philanthropists.

Education is indispensable to an individual's advancement and the fortune of civilizations. It paves the way for human awareness leading to tolerant and broadminded societies. Covid has brought the world to its knees by playing havoc with the health and education of billions of learners. Now on, each decision and directive of policymakers, academicians, and communities will decide the future of human education and the planet. Whatever the trajectory, the tough times always have hidden opportunities for unearthing human potential and resourcefulness. The transformation and transition that Covid-19 has unleashed in higher education institutions cannot be put to halt. We will always compare our lives before and after the pandemic. The pandemic has taught us that the world has shrunk more than we infer and life is more culpable than we assume.

Ultimately, the HEIs should ascertain the preparedness of preventive responses to such future catastrophe with cooperation, patience and compassion. The frontline academician should get the leeway to work collaboratively with students and communities with the vision of equitable future societies as, "education is the bulwark against inequalities. In education as in health, we are safe when everybody is safe; we flourish, when everybody flourishes" (UNESCO 5).

We have to chart out our future plans carefully probably tread on one from the aforementioned path. Firstly, we can endeavour to get back where we had been before the pandemic rolled out. Secondly, we need to adapt to whatever the Covid upsurge offers. Thirdly, we may think of reinventing our institutions and can proactively decide on a resilient and promising future for our institutions. As the virus is still around like an impersonator, there are no ready-made solutions outside the situations coming ahead. It's all upon us how we invest in the nourishment and education of young minds - and, in turn, in families, societies and humanity.

References

Harari, Yuval Noah. "In the Battle Against Coronavirus, Humanity Lacks Leadership." *Time*, 15 Mar. 2020, time.com/5803225/yuval-noah-harari-coronavirus-humanity-leadership/.

Azzi-huck, Kaliope, and Tigran Shamis. "Managing the Impact of COVID-19 on Education Systems Around the World: How Countries are Preparing, Coping, and Planning for Recovery." *World Bank Blogs*, 18 Mar. 2020, blogs.worldbank.org/education/managin g-impact-covid-19-education-systems-around-world-how-countries-are-preparing.

Jena, Pravat Kumar, "Impact of Pandemic Covid-19 on Education in India." *International Journal of Current Research*, vol. 12, no. 7, pp. 12582-586. journalcra.com/article/ impact-pandemic-covid-19-education-india.

Pokhrel, Sumitra, and Roshan Chhetri. "A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning." *Higher Education for the Future*, vol. 8, no. 1, 19 Jan. 2021, pp. 133-141. Sage Journals, doi.org/10.1177%2F2347631120983481.

Roy, Arundhati. "'The Pandemic is a Portal' Free to Read." *Financial Times*, 3 Apr. 2020.

www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca.

UNESCO, International Commission on the Futures of Education. "Education in a Post-COVID World: Nine Ideas for Public Action." 2020. en.unesco.org/sites/default/files/ education _in_a_post-covid_world-nine_ideas_for_public_action.pdf.

About the Journal

Maharshi Dayanand University Research Journal ARTS is a biannual refereed journal of the Maharshi Dayanand University Rohtak. Although having a publication history of many decades, since 25.07.1985, it was registered with the Registrar News Papers for India, New Delhi on 20.09.2002. Ever since, it is being published regularly by the University. The Journal is published twice a year, in June and December. Its ISSN is: 0972-706X. The Journal figures in the reference list of quality journals in the multidisciplinary category and is ICI Indexed. Turnitin anti-plagiarism software is used to check the similarity of the manuscripts submission for publication.

Publication policy

It is an interdisciplinary journal providing a well- established platform for publication of research articles drawn from Social Science, Humanities, Education, Performing and Visual Arts on various facets of theoretical and applied nature. The journal welcomes only original papers, not published elsewhere. Authors alone are responsible for the views expressed in their paper.

Peer review policy

There is a well laid out system of peer review of the contributions submitted by scholars. All research papers are sent for a blind review by the experts in the related subjects/ fields. The comments of the reviewer are conveyed to the author. Only on receiving an acceptable revised version, is the contribution published. Rejected papers may not be sent back to the authors.

Ethics policy

Only original work not published elsewhere, in whole or in part, is published. Authors are required to give a certificate to this effect at the time of submission for publication. The contributions are screened carefully to detect any regional, political, religious, and social or gender bias. The conclusions drawn are expected to be based only on empirical/ processed data. The journal is particularly averse to any kind of plagiarism/plagiarized material.

Guidelines for Contributors

The articles/ research papers sent for publication in this journal must adhere to the patterns of style and format being described below:

1. Manuscripts must be written on one side of 21 x 28 centimeters, i.e., 8.5 x 11 inches. (or quarto) paper in double spacing in the format of 12 point text single font- Times New Roman and preferably in M.S. Word package in English. The maximum word limit of a paper is between 3000-5000 words. It should be accompanied with an abstract not exceeding 200 words including five keywords, scope, methodology, and main findings of the work. Research papers written in Hindi are not accepted.
2. For empirical papers the pattern would include a sequence of writing the Title, Name(s) of the Authors(s), Abstract & five Keywords, Introduction (brief but highlighting the major variables along with relevance of the study), Objectives/ Problem, Hypotheses, Methods and Procedures (including design & sample), Results, Discussion and References.
3. The theoretical papers must be clear and relevant in the introduction of the subject with a major focus on the principal theme, based on fresh theoretical insights which should be analytical, logical & relevant.
4. The paper must accompany a statement by the contributor that it has not been, wholly or partially, published or sent for review to any other journal. It should not be submitted elsewhere until a decision is received from this Journal.
5. Manuscripts should be carefully checked before submission and must be preceded by a covering page stating the title of the paper, full name(s) of the author(s),designation(s) / affiliation(s) and postal address along with e-mail address.
6. References should be arranged in alphabetical and chronological order. In-text reference should follow author-date style. The reference list at the end of the paper, should follow author's name, title, journal, its volume, number and pages should be given. Title of the book or journal should be in italics. Follow APA style guide latest edition for referencing.
    i. For published paper: The name(s) of the authors(s).Year of Publication. Name of the Article & Journal, Volume, Number & Pages. e.g., Crang, M. (2005). Qualitative methods: there is nothing outside the text? *Progress in Human Geography*, 29(2) 225-33.
    ii. For book (two authors): The name(s) of the author (s), Year of Publication, Title of Book, Place of Publication, and Publisher's Name. e.g., Krishan, G., & Singh, N. (2020). *Researching geography: The Indian context* (2nd ed.). Routledge: London.
    iii. For journal article from a library database a digital object identifier (DOI) should be included at the end of the reference. If there is a DOI, keep the volume number, but omit the article's issue number. Format of a DOI could be:https://doi.org /10.1037/0735-7044.121.1.21. If the article is found through web search, not a library database, provide the URL of the journal home page such as- Retrieved from http://ojs/lib.swin.edu.au/
7. Spellings of Oxford Dictionary are to be used uniformly.
8. Footnotes should be numbered consecutively and typed on sheets separate from the text. Illustrations in the form of maps and diagrams should be clear with strong black and white contrasts, numbered consecutively. If photographed, they should be on glossy paper. The ratio of height to width should preferably conform to that of the Journal page (19 x14.5 centimeters, i.e. 7.5 x 5.8 inches). Tables and Graphs should be given on separate pages. Maps should be in JPG format with 300 dpi clearly indicating where these are to be placed in the text.
9. Authors alone are responsible for the views expressed in their research paper and for obtaining permission from the concerned authority /person for copy right material, if used.
10. Those who wish to get their book(s) reviewed may send two hard copies of their book(s) to the Editor-in-Chief.
11. Copyright of the articles published vests in Maharshi Dayanand University Research Journal ARTS.

Two hard copies and one soft copy of the paper may be submitted to the Editor-in-Chief. Online submissions are also accepted. For all correspondence related to manuscripts of the papers or book reviews, refer to 'Contact Us'.

Regn. No. HARENG/2002/7803

Correspondence
Professor Loveleen (Editor-in-Chief)
Department of English & Foreign Languges

Journal Secretariat
Swaraj Sadan
Maharshi Dayanand University, Rohtak-124001
Ph. : 01262-393573-74 /
Email:mdurj@mdurohtak.ac.in
http://www.mdu.ac.in/Journals/about.html

K-261-100, MDU Press