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COVID 19: Impact and Response

Volume II

Editors:

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Preface

The new respiratory pandemic disease i.e. COVID-19 has caused disruptions in the lives and customs of people with significant impact on the economies of nations. The outbreak of the disease is a global health emergency and of international interest. This global health challenge leads to the infection, morbidity and mortality of many people.

In the weeks since the World Health Organization manifest the corona virus (COVID – 19) episode a worldwide unstipulated wellbeing crisis, the COVID-19 pandemic has influenced 212 nations and forfeit increasingly than 400,000 lives. Still today there is no successful remedy to lockup the spreading of this infection. The pandemic is developing prior disparities, uncovering vulnerabilities in social, political and financial frameworks which are thusly intensifying the effects of the pandemic.

Governments of various nations adopted restrictive measures involving both within the countries and at international borders as effective response to the corona virus pandemic. These measures includes confinements of workers and order to work from home, banning of social and religious gatherings, closure of market places, closure of workplaces including airports, building or creation of testing and isolation centers, quarantining/isolation of suspected persons, self-imposed isolations, and the use of face masks whether surgical or cloth type in situations where there is a cogent reason to defy the restriction.

Academic communities were not left out as institutions of learning were requested to close in many countries since it is very easy to spread the virus among students and youths in tertiary institutions where socialization is an essential part of their lives.

To address the various issues related with the COVID – 19 we have published the present book. The interdisciplinary approach of the book will make the book useful and informative to the students, teachers, researchers, scientists and policy makers in India and abroad.

We thanks all contributors, publishers and all our well-wishers for their blessings, without which this book would not have come into existence.

- Editorial Team

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Identification of Face Mask using Deep Learning based Convolutional Neural Network Model

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Abstract:

The COVID-19 outbreak impacts negatively on various social and economic factors like income, education, employment, income and community safety of the people. As of now, there are two major ways present to escape from the COVID-19 outbreak. They are of wearing face mask and maintaining the social distancing whenever the people are in crowded areas. However, a few people do not understand the seriousness of the negative impacts of the COVID-19 and they are violating wearing mask in public places. The proposed work targets to develop an automated mask detection system using deep learning based Convolutional Neural Network (CNN) by capturing and processing the face images of the people. The face images with/without mask used in this work consist of different colours, different sizes and different orientations. All the images are converted into grayscale images with a uniform size of 100x100 pixels before applying them to the CNN model. Training the model consists of two phases. In phase 1, training of the face mask detector is carried out. In phase 2, applying the face mask detector on the captured images is carried out. A PC along with its web camera is used to capture the video and then the video stream is converted into image frames which are pre-processed. After the pre-processing step, the features from the images are derived and fed to CNN model to detect a person with face mask and without face mask. The result is displayed on the display screen of the PC.

Introduction:

The pattern of wearing face masks is increasing tremendously because of the COVID-19 pandemic all over the world. Prior to this infection, people used to wear the masks for shielding their wellbeing from contamination like a protection from pollution [1]. While others are reluctant about their look, they conceal their feelings from public by concealing their faces by wearing a mask. Researchers demonstrated that wearing face masks can decrease the

Coronavirus transmission [2]. Coronavirus is the pandemic infection that hit the human wellbeing in the only remaining century. In 2020, the quick spreading of COVID-19 has constrained the World Health Organization (WHO) to proclaim COVID-19 as a world level pandemic [3]. More than 5 million cases were tainted by this infection during a half year across 200 nations. The infection spread through close contact and in people congested areas. The COVID-19 pandemic has offered ascend to an exceptional level of overall logical participation.

Man-made consciousness based deep learning can assist with battling with this infection from numerous points of view. This deep learning strategy permits the specialist and the clinicians to assess the tremendous amounts of reports to estimate the appropriation of COVID-19 to fill in as ahead of schedule as notice component for the possible pandemics, and to group weak populaces [4]. The arrangements of medical care needs to subsidizing for arising innovation, for example, AI, IoT, enormous information and AI to handle new viruses.

To better comprehension of contamination rates and to follow and rapidly identify diseases, the AI's capacity is being misused to address the crown pandemic. Individuals are constrained by law to wear face mask in numerous nations. These principles were created as an activity to the dramatic development in cases and passing in numerous territories. Notwithstanding, the way toward checking the enormous gatherings of individuals is turned out to be more troublesome. The observing cycle includes the recognition of any individual who isnot wearing a face masks in open regions.

In this work, the face mask identification model is proposed using deep learning based convolutional neural network architecture. The proposed model can be coordinated with reconnaissance cameras to diminish the transmission of COVID-19 by permitting the location of individuals who are wearing face mask and not wearing face masks. Implementation of the proposed model is practically realized by using the well-known learning strategies like Opencv, Tensor Flow and Keras. The AI based CNN deep layer networks are programmed as face mask detection algorithms where training the network and testing the network are performed to detect the face masks with high degree of accuracy.

Materials and Methods:

The proposed mask detection model consists of three steps of working procedures namely, image/data pre-processing, model training and testing/implementing of deep learning-based CNN model. The images with and without masks dataset have been obtained from Kaggle that consists of 1900 images among which 1000 images are with mask and 900 images are without mask.

Image/data pre-processing

The face images with/without mask used in this work consist of different colours, different sizes and different orientations. Therefore, it is needed to convert all the images into grayscale images with uniform size and orientation. The colour information of the face images does not play a vital role and not a critical point for detecting face mask and hence only grayscale images are used. Then, all the images are resized as 100x100 pixel images before applying them to the convolutional neural network.

The dataset is created from the images by deriving the area of facial structures as shown in Figure 1. Initially, typical pictures of the faces are captured by focusing the face boundaries. Then, the area of facial structures, including eyes, eyebrows, nose, mouth, jawline points are fixed to derive the required features. Figure 1 shows these facial structural points of one of the authors of this article for explaining the proposed concept.

Table 1: Various Face Attributes used for Face Mask Detection

Sr. No.	Attributes	Remarks
1	Area of Faces	Descriptor of a shape i.e., square
2	Face Orientation	Five orientations from front, left, left-front, right and right-front.
3	Area of Eyes	Descriptor of eye focuses.
4	Location of Masks	Annotated by a shape i.e., rectangles.
5	Type of Masks	Details related to mask with the company logo or not; face is covered by the persons hand; face covered by hand, etc.
6	Occlusion Degree	Defining a face into four regions namely, eyes, nose, chin and mouth.

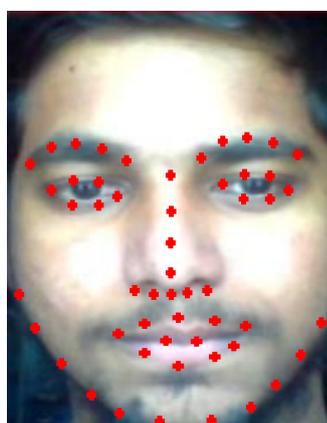


Figure 1: Fixing the area of facial structures in face recognition

From the area of facial structures, various attributes are derived which are used to detect the face mask. The attributes are listed in Table 1.

Training of the proposed model

Training the proposed model consists of two phases. In phase 1, training of the CNN network as a face mask detector is carried out. In phase 2, applying the trained face mask detector on the captured test images using CNN model is carried out.

Deep Learning and CNN model

Deep learning is a subset of machine learning algorithms which are using huge number of neural network layers for extracting the required feature vectors from the input data/images. Using deep learning algorithms, the nature of human brain is imitated for learning purposes. Hence, many automated learning systems are using the concept of deep learning algorithms.

Table 2: List of tools used for implementing deep learning algorithms

Sr. No.	Tools	About the tool
1	Keras	An open-source software library that provides a Python interface for the synthetic neural networks. Keras acts as an interface for the TensorFlow libraries. Keras contains various executions of neural network building blocks like layers, goals, initiation capacities, streamlining agents and assortment of apparatuses to make working with image and text information. In addition to plain neural networks, Keras has support for convolutional and recurrent neural networks.
2	Tensorflow	TensorFlow is an open-source software library for machine learning. It is often used across a variety of tasks related to training and inference of deep neural networks.
3	Numpy	Utilizing NumPy in Python gives usefulness like MATLAB since they are both decoded. It permits the client to record down quick projects. It has a strong computational power of other higher-level languages such as C and Fortran to Python which are easier for learning and implementing.
4	OpenCV	OpenCV is a set of libraries having the programming capacities principally applied towards computer vision related applications. Few selected application areas are Facial recognition system, Gesture recognition, Object detection, motion tracking and so on.

Many deep learning algorithms are implemented using convolutional neural networks. The accuracy of CNN classification algorithms is very close to human-degree class accuracy and CNN performs rapid image classification [5]. It consists of various layers which include filters convolved over the input, activation functions and pooling (sub-sampling) operations. Each layer implements a specific functionality for complex characteristic extraction from the input images. Various tools are available in the field of deep learning to implement the deep learning algorithms. Table 2 explains the tools and their details. In this work, Keras and TensorFlow [6] have been used to simulate and implement the proposed face mask detection system.

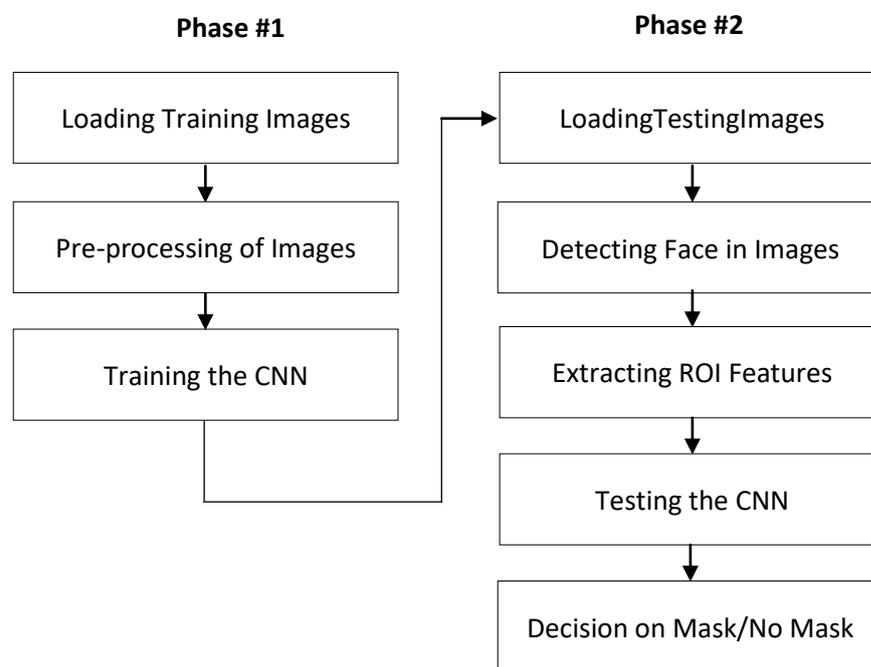


Figure 2: Training of the proposed model

In phase 1, a combination of 1000 images with face mask and 900 images without face mask are used to train the CNN network. Initially, all these images are pre-processed to train the CNN as shown in Figure 2. A training model using Keras/TensorFlow which are open-source software libraries working as a Python interface for CNN networks. In phase 2, the web camera is switched on, the video stream is converted into image frames and then the images are pre-processed with a height and width of 100x100. From these test images, the face Region Of Interest (ROI) are derived using the face structural features including eyes, eyebrows, nose, mouth, jawline points. These features are given to the CNN network for face identification and afterward classifying each face with face mask or without face mask. The results are displayed

on the screen of the PC with a rectangular box. If a person in front of the web camera does not have wear face mask, his face is matched with a RED coloured rectangular box with a NO MASK message. Similarly, if a person wears a mask, the face is matched with a GREEN coloured rectangular box with a MASK message.

Results and Discussion:

The proposed work has been implemented using Keras/Tensorflow platform and coding for the proposed algorithm has been written using Python programming language. The results are obtained by one of the authors sitting in front of the web camera. Figure 3 shows the output of the model to identify the author without mask.

For demonstration and pilot implementation purposes, one of the authors is sitting without face mask in front of the PC and TURNED-ON web camera to detect the face with/without face mask. It is observed that the face of the person is pointed out with RED colour rectangular box.

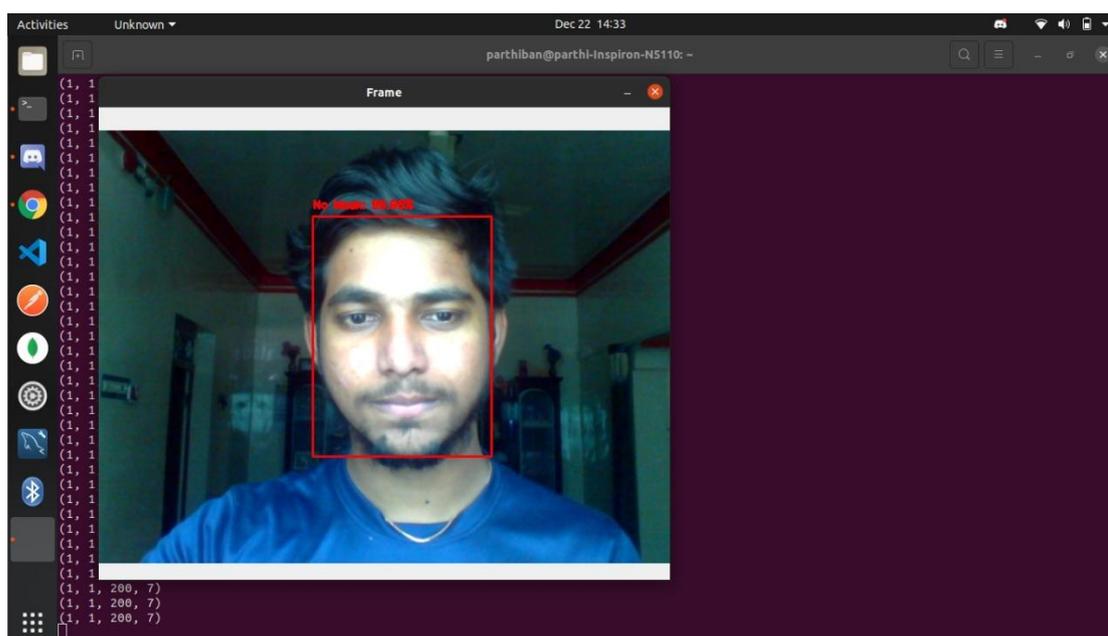


Figure 3: Identification of a person without mask

Figure 4 shows an output image of a person with mask. To test the identification of mask, the web camera of the PC is in TURNED-ON condition. It is observed that the person/author with mask is identified using a GREEN coloured rectangular box along with a message at the top of the rectangular box. The accuracy of the model is found in between 95% to 99.5%. The error rate of the system is observed in between 0.5% to 5%. This error rate is

because of the colour of the mask used by the users. Currently, the input colour images are converted into grayscale images and the system is trained. To overcome this issue of the proposed system, colour images can be directly used along with colour image processing algorithms.

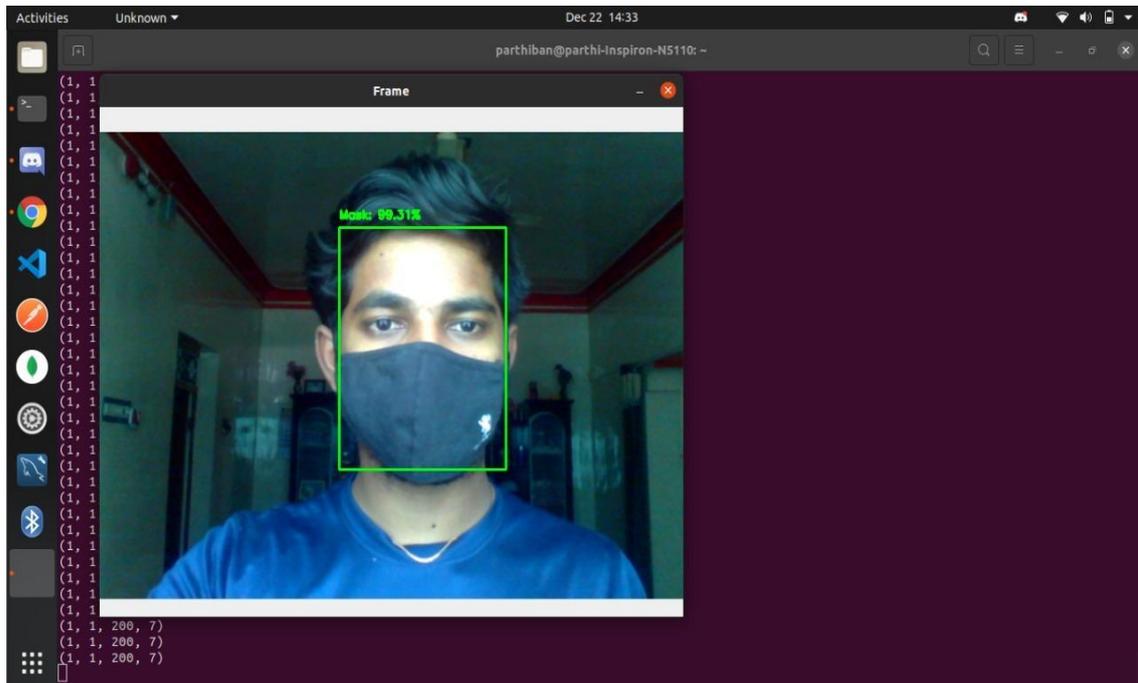


Figure 4: Identification of a person with mask

Conclusion:

Designing and developing a face mask identification model can ensure the safety of the society during the pandemic situation. It will be useful to reduce the transmission of the viruses among the people and have high chance of protecting them from deadly virus like Corona. It is also possible to instantly detect the people without mask in public places and implement sanitary regulations. In addition, the model can be deployed into several deployable devices while keeping the security and protection of clients' information. Thus, the face mask detection model will be the leading solution for most businesses, particularly retail, medical services and corporate areas. The proposed model can be integrated with several IP cameras that are already installed in public places. The IP cameras have RTSP enabled and hence addition of any software/hardware is required in most places. These cameras can be used for capturing the images of the people those who are not wearing masks and necessary action can be taken. There is a possibility of matching the people those who are not wearing the mask with

their citizenship databases. Based on the matching results, an immediate alert can be sent to them.

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REVISITING HEALTH CARE SYSTEM IN THE COUNTRY AND MEANS TO IMPROVE IT: INDIAN HEALTHCARE SYSTEM IN THE DARKNESS OF COVID-19 PANDEMIC

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Abstract:

Allopathy is well known for its quick relief giving capabilities from pain and suffering and a majority of physicians in India are practicing allopathy only. People of India have different opinion on methods of healing still, approximately 90% of urban as well as rural Indian population is inclined towards allopathy. Although Indian health care system ranks globally 155th, in terms of health care budget [Health Spending Index, released by Oxfam] yet was challenged harshly by CoVID-19 pandemic. Thinktanks re-thought on the need of revisiting and innovating Indian healthcare systems when well developed country could not stand against CoVID-19 pandemic. Major problems with Indian healthcare system (especially in darkness of CoVID-19 disease) included lagging doctor: patient ratio, lack of adequate healthcare support staff, lack of testing facilities, lack of oxygen, lack of ventilators and lack of testing kits. This condition was further aggravated by black-marketing and hoarding of life saving drugs. High ignorance of public (not getting vaccinated, not wearing mask and not following CoVID-19 appropriate behavior) further pressurized Indian healthcare system. Some of the suggestions for innovating Indian healthcare system include mandatory internship of MBBS/ B. Pharm/Nursing graduates in CoVID-19 wards, relaxation in exam to physicians who have received qualification from overseas universities recognized by ICMR, increasing seats of MBBS, motivating hospitals for appropriate disposal of biomedical waste. It should be understood that a pandemic never ends. It only mitigates and settles within the society. Public understand the importance of CoVID-19 appropriate behavior and abide by it. Only then any mitigation can be expected otherwise waves of CoVID-19 will keep on making everyone suffer.

Keywords: Allopathy, CoVID-19 pandemic, Indian healthcare system, Remdesivir, CoVID-19 appropriate behavior.

Introduction:

India; a holding together federation, is a country with agriculture as its primary source of income. It is the 7th largest country in terms of area in the world (3.287 million km²). With every 200 km you travel, food habits, culture, religious practices and lifestyle of the people changes and it is really a privilege for its citizen to be a part of it. When it comes to medical practices, a whole lot of people have different ideas and beliefs of healing. On one hand, some people are convinced by allopathic system of medicines because of its ability to provide immediate relief from pain and sufferings [1] while on the other hand there exists people who run away from it on account of adverse effects that such medicines cause. Opinions of people for system of medicines have always been conflicting and in search of permanent cure and relief, a good percentage of population has now agreed on using Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy (AYUSH) as well.

Today, approximately 90 % of rural as well as urban population has inclination towards allopathic system of medicines over AYUSH [2] so the chapter's scope of discussion will be limited to constructive criticism of allopathic system of medicines; specially amid CoVID-19 pandemic.

Why revisiting is even required?

We all have heard about how CoVID-19 caused significant morbidity and mortality in some countries like USA, Italy and Brazil. Ruckus happened everywhere and some ships and carriers were turned into hospitals (obviously with beds and ventilators) to compensate and cope up with increasing load on health care system [3-5]. People, all over the world, were in a huge fear of death approaching towards them in the form of Covid-19. This conversion of ships and carriers into hospitals made thinktanks to rethink if their country is capable of dealing with such crisis. This led to inception of idea if revisiting of health care system is required and following this, policies were made to deal with the crisis (which was approaching the countries all over the world).[6,7]

CoVID-19 crisis in India: the starting of national lockdown

On 27th JAN-2020, a 20 years old female saw emergency department in Kerala state and was diagnosed CoVID-19 positive. This was the day on which first CoVID-19 case was reported in India [8]. On 30 Jan of 2020, CoVID-19 was declared public health emergency of international concern and on 11 Mar 2020, it was declared a pandemic by World Health Organization [9]. Amid such declarations, India also started witnessing more and more cases of CoVID-19 per day

and in order to contain novel corona virus, nationwide lockdown was declared by the hon'ble Prime Minister on 24th MAR-2020 (lockdown started on 25th MAR-2020).[10]

A huge population was made to stay at the place where it worked during lockdown. Amid lockdown, labor fell short of money on account of wages cut. They had to move because of the crisis. This entire scenario created distress and anger in them. Entire government was criticized for imposing lockdown without planning. [11,12]

As the number of cases start hiking and as the death toll start increasing, a pressure started building on health care system. Evidently, Indian healthcare system was not ready to handle this emergency because of lack of CoVID-19 testing facilities, lack of PPE kits, lack of knowledge about disease pathophysiology, lack of vaccines, lack of treatment algorithms and most important of all fear of healthcare professional themselves being infected. [13, 14]

08th OCT 2020, it was reported that corona virus (CoVID-19) first peak has start to recede. Nonetheless, people were warned not to celebrate openly in the upcoming festive season since a hike in the number of cases may put health system in stress once again.

Now some questions arise here, did public exercised precaution after CoVID-19's first wave peak flattened? Is government only responsible for public health? Will revisiting and reformation of health care system guarantee that such pandemics can be controlled (in future) also? Does public participation have no value?

Vaccination to combat CoVID-19: Interlude between 1st and 2nd wave of CoVID-19

Ministry of Health and Family Welfares, Government of India along with The Central Drugs Standard Control Organization (CDSCO) granted accelerated/emergency use authorization to two vaccines namely Covaxin[®] and Covishield[®] [15-17]. On 5th Jan 2021, in a press release it was stated that the distribution of vaccination will be done by Co-WIN Vaccine Delivery Management System. With the help of this system the transit of vaccine can be digitally tracked. The vaccine will move as follows:

Manufacturer → Primary Vaccine Store → State Vaccine Store → District Vaccine store → Primary Health Centre.

In the same press release, on behalf of Government of India, Union Health Secretary Shri Rajesh Bhushan stated that Co-WIN Vaccine Delivery Management System is a public health good and other countries are welcome to adopt it in this time of global crisis. [18]

Vaccination program for health care workers and the front-line workers started in India on 16th JAN 2021. This followed voluntary vaccination for Indian citizens who are above 50 years in age and then voluntary vaccination for those who have age >45 years.

Indian markets soon became short of vaccine stocks since India had to export vaccines to some countries under WHO-scheme.

India initiated discretionary vaccination for more than 600 million Indian citizen whose age ranges between 18-44 years. A person who is willing to take vaccine has to register through CoWIN portal but due to technical errors the site crashed. This further provoked anger of furious citizens of India and **#Waiting for OTP** soon trended on twitter. [19]

With the shortage of vaccine another concerns like vaccination of people with fake vaccine and development of spam link (to be used for registration on CoWIN application) also came into picture. A perpetrator uses this spam link to do cyber fraud. As a matter of fact, the bank account of victim gets debited within a movement after he/she has clicked on the spam link. Spam link turned out to be greatest tormentor of people during lockdown. [20, 21]

Health budget allocation during CoVID-19: first wave and second wave

In MAR 2019-2020, Department of Health and Family Welfare, government of India was allocated 15 percent of total union budget by Finance Ministry, government of India (this 15 % amounted to Rs 62,659 crores). As the pandemic progressed, it was observed that the amount became short to overcome the health care needs. Taking an account on this, amid CoVID-19 pandemic, the union budget (for department of health and family welfare) was duly raised to 69,000 crore INR in order to cope up with the crisis. [22, 23]

Now a question, several countries in the world don't have standing army (like Costa Rica, Andorra and Marshall Islands to name a few) and they have well developed healthcare system. [24, 25] Should Indian defense budget be revised during this pandemic so that more amounts would be available for health care system?

CoVID-19 second wave: Remdesivir crisis

A broad-spectrum antiviral drug Remdesivir (developed by Gilead sciences for IV injection) recently got into attention when FDA authorized its use in CoVID-19 patients in October 2020 based on data received from 3rd phase of three clinical trials (SIMPLE-Moderate, ACTT-1 and SIMPLE-Severe). Data received from these trials demonstrated that treatment with remdesivir was associated with statistically significant reduction in time to recovery and has also shown clinical improvement in hospitalized COVID-19 patients. [26, 27]WHO, however, on

20 NOV 2020 in its living guidelines on “clinical care of CoVID-19 patient” clearly warranted a conditional recommendation against the use of remdesivir (specially in hospitalized patients). According to this report, data from open-label, randomized SOLIDARITY trial and other random clinical trials (done on approximately 7000 patients) could not prove efficacy of Remdesivir in CoVID-19 patient. Its use was nowhere associated with reduced mortality, reduced need of mechanical ventilation and reduced time of hospital stay. [28, 29] Drugs Controller General of India (DCGI), amid CoVID-19 pandemic authorized, 100mg/vial IV use of remdesivir in India on 07 JUL 2020. First approval was given to Mylan NV and the non-exclusive rights to develop generic versions of remdesivir were later given to Hetero, Cipla and Jubilant Life Sciences (Indian Pharmaceutical companies).

Although, approval was given to emergency use on severe CoVID-19 patients only, still Remdesivir was proposed as magical bullet by some thinktanks. Remdesivir was found to be one of the excessively misused and overused drugs. Entire print and electronic media were later floated with the news concerning misuse and overuse of remdesivir. [30, 31]

The drug was then hoarded and black-marketed by some stock holders. According to a report, a single vial was sold for approximately 25,000 -30,000 INR (vs. MRP which ranges from 3,000 to 5,000 INR). Several state governments along with central government were criticized for this shortage and black-marketing. Later, a policy of direct supply to hospitals was applied and adopted and the shortage could be overcome. [32, 33]

Dexamethasone: a drug relegated in CoVID-19 pandemic.

In RECOVERY trial (a randomized, multicenter, open label trial conducted in UK); dexamethasone was found to significantly reduce mortality in hospitalized patients with CoVID-19. [34, 35] Having discussed entire ruckus caused by/for Remdesivir, one question which is worth to ask here is that why Dexamethasone was not given any primary importance in drug therapy of CoVID-19?

With due respect to the loyal front-line health workers and other front-line staff, answer may lay in the fact that black marketing was not possible for dexamethasone (Cost 10.00 INR, on an average).

Another reason being the fact that at some places, hospital staff & government officials were actively engaged in hoarding, diverging and black marketing of Remdesivir. Who could have lost such a lucrative opportunity? [36-38]

CoVID-19 second wave and shortage of medical oxygen

With 11,000 cases being reported, 2nd wave of pandemic initiated in India on 10 FEB-2021. This was followed by reporting of approximately 22,000 cases per day. A sudden increase in mortality in CoVID-19 patient was seen during this period. As the 2nd wave progressed, on 22 APR-2021, India witnessed 314,835 new CoVID-19 cases which were world highest daily cases. A bench headed by Chief Justice of India (CJI) SA Bobde, at Supreme Court of India, took Suo-moto cognizance of increased infections and asked central government to present national level plan to combat the disaster on 23-Apr-2021. [39]

Second wave was attributed to novel corona virus which was double/triple mutant (B.1.618) This strain was capable of escaping antibody attack and hence it was capable of causing respiratory distress and decreased SPO2 levels. A sudden spread of this strain caused compromised breathing in a vast majority of patients. Everyone ran after getting admission in hospitals. As a matter of fact, hospitals fell short in accommodating a large number of patients and crisis developed. Indeed, Indian Healthcare system was never ready to accommodate such a huge quantity of patients and evidently, crisis of medical oxygen was certain to happen. [40, 41]

Nevertheless, several countries stood up for solidarity with Indian subcontinent at the time of this crisis. India received medical oxygen, oxygen concentrators, mechanical ventilators, N95 masks along with Favipiravir and Remdesivir from US, Russia, New Zealand, France, Ireland, Bahrain, Australia, Mauritius, Germany, Qatar, Switzerland (approximately 40 countries in total) to overcome this crisis. [42, 43]

Inappropriate disposal of bio-medical waste: a contributing factor to spread of disease:

According to WHO guidelines, before treating CoVID-19 patients, a doctor and other members of health care team must wear a disposable Personal Protection Equipment kit (PPE kit). Now, the concern is that several hospitals of India either disposed this waste in proximity on open land or burnt it, a behavior showing high negligence on the part of hospital staff. [44, 45]

Open disposal leads to increase in the chances of spread of disease since people might come in contact with it and burning pollutes environment. The decision for imposing fine in such cases lies in the hands of National Green Tribunal, State Government and District Magistrate.

Pandemic within the pandemic: black fungus infection or Mucormycosis:

Another infection which has recently attracted attention of physicians is Mucormycosis. This infection is reported to affecting patients with uncontrolled diabetes mellitus, compromised immune system and in patients who are recovering from CoVID-19 and have received steroid based immuno-suppressant therapy. [46]

Medical oxygen has to be hydrated by using distilled water before it can be given to any patient. Use of tap water and/or dirty water (in negligence or ignorance) for hydrating medical oxygen has also been attributed to increase in the number of cases of black fungus.

Black fungus is treated either by surgical debridement of affected area or by using IV drug therapy using Posaconazole, or Isavuconazole and Amphotericin B. Just like remdesivir, people are also facing shortage of amphotericin-B and its distribution has now been centralized (just like remdesivir).[47, 48]

Shortcomings in Indian healthcare system:

In the abovementioned paragraphs, it is evident that the reason for crisis was mismanagement. However, there is a need that policy makers should know where the problem is and at grassroot level, how same can be resolved. Here are some of the shortcomings:

- Lack of Health Care Professionals (Doctor to patient ratio is 1:11,000 versus 1:1,000 as per WHO) [49]
- Lack of hospitals and beds.
- Lack of Medical Oxygen and Ventilators
- Lack of Oxygen Cylinders, Oxygen carrying containers and oxygen concentrators.
- Irrational and rampant use of drugs
- Black marketing of medicines
- Sales of spurious drugs
- Lack of vaccines.
- Lack of motivation in people to get vaccinated. [50]

Some solutions of short term and long-term importance:

- Mandatory internship of MBBS, B. Pharm and B. Sc (nursing) undergraduates in CoVID-19 ward.

- Relaxation in the Foreign Medical Graduate Examination (FMGE) to MBBS graduates who have completed MBBS from a university recognized by Indian Council of Medical Research, overseas.
- Number of beds in established hospitals must be increased.
- Medical and healthcare staff must be appropriately trained to deal with crisis.
- More new hospitals must be opened and maintained. There is a need that periodic maintenance of such hospitals must be ensured.
- Seats of MBBS should be increased (to combat crisis in future as well).
- Union defense budget can be revised during this pandemic so that more amount be allocated to department of health and family welfare.
- A portion of pharmacists (specially with Masters in Pharmacology) and Nursing professionals must be given special training to combat such crisis. They must be recognized for services offered by them during crisis. They can be called reserve crisis force.
- Mass education is important. Seminars, webinars, advertisements, editorials etc. (Of public interest) must appear on media on a timely basis for motivation of public and for removing panic). Calmness and prompt responsiveness are very important during disaster.
- 10% to 15% royalties must be fixed to the companies for life saving drugs and permission for generic version manufacturing must be immediately given to approved manufacturers at the time of pandemic(s).
- A registry of plasma and blood donors must be maintained by government department and hospitals. This will help the person to find out suitable donor in crisis.
- Strict actions must be taken on those who are involved in black marketing of medicines and in selling spurious drugs. Enforcement of law should be prioritized over developing more laws. Law is impartial (not blind).
- Strict rules should be made and enforced on disposal of biomedical waste. Awareness program in such pursuits must also be launched on a periodic basis.

Conclusion:

We need to remember the fact that life cycle of virus is very short. As it multiplies, it sometimes gets mutated to less virulent form and this is the time when a pandemic settles within the society.

We Indian citizens need to understand this that until a less virulent strain of corona virus does not emerge from virulent strain, we all need to exercise CoVID-19 appropriate behavior (wearing mask, avoiding gathering and maintaining physical distancing). If we don't then we should be ready for 3rd wave and so on which can be more disastrous than 2nd wave. After all, it is we who make the nation and there is no point in cursing the government when we, just by changing our behavior can contain corona virus disease.

Having stated this, the abovementioned statement by no way absolve government from responsibilities related to public health since Indian constitution guarantees every citizen of India a right to life (article-21).

Both public and government have to agree and abide by the policies made only then mitigation of pandemic can be expected. Meanwhile government and policies maker need to think and act on the measures suggested in this article/chapter to deal with this pandemic so that if 3rd and 4th wave appears, the system should be ready to combat it.

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Organizational Performance and Global Pandemic:

Rewriting the Future HR Practices

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Abstract:

The whole Universe is facing the crisis due to the Global Pandemic in this volatile environment. It has posed numerous challenges in front of the Business Leaders. At this point, wherein pandemic situation is getting worsen and organizations are juggling with a variety of challenges from the slump in sales, a halt in supply chain and to keep their employees not only engaged but also to take care of their Employees' emotional, physical, mental and social wellbeing. This paper focuses on how HR Leaders are coming up with revolutionary practices and leading their organizations through the pandemic crisis worldwide. The Objective of this paper is to explore the novel and revolutionary HR Practices to cope up with changing needs of employees, their concerns and focusing on the overall organizational performance.

Keywords: Global Pandemic, Organizational Performance, Organizational Effectiveness, HR Practices.

Introduction:

The word "crises" is composed of two characters. One represents danger and the other represents opportunity. Global Pandemic Crisis has created a great turmoil for employees and work. As the businesses and Organizations face the possibility of **danger** to its valuable human resources, which are always considered as the life and blood of any organization. At the same time, this is the biggest **opportunity** for HR managers to help alleviate the potential and real strain on both their people and organization. This Crisis put disaster plans top of mind for all HR leaders, none more so than HR as the outbreaks of such dangerous diseases threaten employees directly — as individuals and cumulatively as a workforce.

Theoretical Framework

Organizational performance is always being captured through Organizational effectiveness and also advantage the countless internal performance results generally linked with more effective or efficient processes. Organizational performance is one of the most important variables in the management research. Managers began to understand that an organization is successful if it accomplishes its goals (effectiveness) using a minimum of resources (efficiency).

Human Resource Management Practices

HR practice is an important aspect and broader concept of organizational management. It aims to affect the level of employee engagement and influence directly those who work within the organization. This includes organizational culture, communication practices, HR activities and systems which further affects the organizational performance.

HRM practices relate to specific practices, formal policies, and philosophies that are designed to attract, develop, motivate, and retain employees who ensure the efficient and effective functioning, overall performance and survival of the organization.

The firms are seeking to gain competitive advantage at all cost and are turning to more innovative sources through HRM practices (Sparrow *et al.*, 1994).

Schuler and Jackson (1987) defined HRM practices as a system that attracts, develops, motivates, and retains employees to ensure the effective implementation and the survival of the organization and its members.

According to Delery and Doty (1996) HRM practices is also conceptualized as a set of internally consistent policies and practices designed and implemented to ensure that a firm's human capital contribute to the achievement of its business objectives. HRM practices a set of practices used by organization to manage human resources through facilitating the development of competencies that are firm specific and generate organization knowledge to sustain competitive advantage. Minbaeva (2005) Practice is the process of an organization by which available resources are developed, combined, and transformed into value offerings (Teece *et al.*, 1997). HR practice is supported going on carrying, increasing or replacing knowledge in the organization (Saa-Perez and Garcia-Falcon, 2002).

Sustainability is the biggest challenge in this competitive Environment. The researchers have exclaimed that human resource practices repeatedly perform comparative activities (Arthur, 1994; Delery and Doty, 1996). Several researchers have emphasized human resource as

a determining factor of organizational performance (Morrow *et al.*, 2007). Pfeffer (1994) and Guest (2002) recommended that universal Human resource practices must be considered as predecessor to firm effectiveness.

Organizational Readiness and Pandemic Plan:

Any Crisis strikes directly at your most valuable asset your employees could last for years. Whenever the organizations develops an impact analysis, they need to work with their partners in risk management and business operations to determine which roles are necessary for the organization to function. It is very challenging situation where Employees worry about more than their physical safety; they worry about the potential disruptions to their own work, and wonder how the organization will plans to manage its operations.

Brian Kropp , Distinguished Vice President, Gartner says, “When SARS spread to four continents in 2003, executives at several companies told us that managing employees’ concerns and questions was one of the most time-consuming associated activities.”

Rewriting the HR Practices: HR Outbreak Management

Organizations would focus on building a culture of trust which will work as a strong bridge between the employer and the employees. Organizations should facilitate HR managers with some specific activities to ensure employees get the requisite support to tackle the emotional roller coaster of this crisis and are productive and engaged.

Guard your Employees

HR Leaders need to be very observant create an open environment to discuss their challenges and concerns related to job security, mental stress as well as showing care and support for them. There should be an open communication to facilitate the regular conversations between managers and employees to come out of the distress arising from the Pandemic

Train Employees

Employees also need to be trained well if they are expected to work virtually or remotely. They are to be provided with necessary Accessories e.g. laptops, cameras etc. Organizations can equip employees to function effectively when remote to make them feel at ease.

Promoting Trust and Dialogue

Two-way dialogue between managers and employees ensures that communication efforts help, rather than hurt, engagement. It is much more important to make the employees aware about the organizational decisions and its repercussions in near future. Opportunities for two-way dialogues can also be created that focus on a realistic picture of both the positive and negative implications of the current COVID-19 outbreak to create a sense of trust amongst the employees through the supportive environment.

Empowerment

Empowering people will be the most effective way to get everything done in time, completing the assignments and showing the output which is required.

Recognition

Timely and effective Recognition to the employees in this situation also creates wonder in the organization. This can be done through public acknowledgment, tokens of appreciation, development opportunities and low-cost perks.

Innovation

The only way to face this crisis is to provide opportunities to the high Potential Employees to innovate and try out new ways to get out of the present situation.

So, the organizations can make an effort to highlight the value of employees' to weigh new activities and ensure that any risks are worthwhile.

Conclusion:

Understanding and managing these challenges not only lead to a better organizational learning experience but also to sustainable organizational performance in the long run. It has been found that the transformational HR practices are the need of an hour in the present scenario. The only way is to know how to mobilize all the organizational resources in the right direction.

Expected Contribution:

This study will have far reaching implications for various industries and start-ups in terms of specific areas being identified for further development in India. Comparative studies similar in nature can also be carried out in various other industrial sectors also.

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THE EFFECT OF COVID-19 PANDEMIC ON SOCIETY

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Abstract:

It was in the year 2019, December the first known case of Covid-19 was detected at Wuhan in China. Government of various countries of the world issued guidelines and imposed lockdown to fight against the virus. The never before challenges put before the human society by the pandemic is affecting various sector of human society. Factories and Industries and educational institution were shut down. Media and Entertainment industry, Tourism and Hospitality Industry and sports were also shut down. Cultural and religious events and festival could not be continued. This reviewed paper attempts at finding out and describing the effect of Covid-19 on various aspect of the society in India. Data has been collected from secondary sources like Journal article, newspaper, magazines, Government and Non-Government websites etc. Many of the Doctors, nurse, medical personnel, migrant worker, person who come in contact with covid-19 infected person have been stigmatized. Affordability of smart device, digital illiteracy, poor internet connectivity and irregular power supply especially in rural area are the main issues in educational sector. Prejudices against Older and person with disabilities perceiving them as burden and less important. Revenue from Tourism & Hospitality, Media & Entertainment Industry and sports climbs down. Unemployment rate is fluctuating and instable as economy of the country is affected. To overcome this pandemic people, need to adjust to the new normal that is a new way of life, lifestyle, eating habits, work culture and social interaction. People shall join hand with the Government in Overcoming this pandemic.

Keywords: India, Pandemic, Impact, Society, Coronavirus

Introduction:

Corona virus disease 2019 (Covid-19) is a disease caused by Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). In December 2019, the first known case of Covid-19 was

detected at Wuhan in China. Fever, dry cough and tiredness are the most common symptoms. The other symptoms include aches and pain, sore throat, diarrhoea, headaches, loss of taste or smell and rash on skin. The serious symptoms of COVID-19 are difficulty breathing or shortness of breath, chest pain or pressure and loss of speech and movement. The World health organization (WHO) announced the novel coronavirus disease as Global pandemic on March 11, 2020 as the number of people getting infected with Covid-19 got increased. According to World Health Organization (WHO) new disease that spread across the world is called Pandemic. It was on March 25 the Government of India started Lockdown to contain the spread of virus. As of May 24, 2021 in India the coronavirus cases are 26,752,447 the number of deaths is 303,751 and recovered patients are 23,728,011 as per Worldometer (2021). A group of people engaged with one another through a constant relation or a large social group who share the same geographical territory and belong to the same political control and cultural expectation is called society (ScienceDaily). Fictor (1957) defined society as a network of interconnected group which can be understood as unit and share a common culture.

The Covid-19 pandemic put an unprecedented challenge to human society. The new Virus entered into the human society as an uninvited guest. School, colleges and Universities of the educational institution had shut down. Online learning system is adopted to compensate the loss of the students and for the benefit of the students. This Pandemic also witness many cases of social stigma against different group of people in the society. A kind of disease that needs to be treated as soon as possible. The job of many people was at risk of losing and pay cut as many industry and factories had to shut down due to Lockdown. Different age group in the society especially the older person are the ones affected by this lockdown and victim of social stigma. Person with Disabilities have hard time managing themselves and following Covid-19 protocol. They are also not free from prejudices and negligence from other member of the society. Travel and hospitality industry is also affected as airways, roadways and waterways were halted along with hotels, pubs, restaurants etc. were disallowed to operate. Media and Entertainment industry and sports are one of the great contributors towards the economy of the country but due to the pandemic effect the revenue from these sectors got decreased. Unemployment is another matter of concern during and after pandemic with factories and industry shutting down and economic health of the country deteriorated. Social distancing which is one of the guidelines for containing the virus is also creating gap in social relation since

not everyone can afford smart device and lack of digital knowledge and skill also act as barrier for people during pandemic in strengthening social relations. The present paper attempts at finding out and describing the effect of Covid-19 pandemic on the various aspects of the society. The authors believed that the paper will help the society members in gaining more understanding on the effect of Covid-19 pandemic and the policy makers and concerned people to gain more insight and take necessary measures for the people working in Media & Entertainment, Sports and Tourism & Hospitality Industry. In the field of education

The effect of Covid-19 pandemic on Society:

The unprecedented challenges in various aspect of human life brought about by the Covid-19 pandemic and its effect on the society have been discussed.

1) Rise in Social stigma

There are many instances of social stigma during covid-19 pandemic. Social stigma is discrimination against other people who belong to a particular place, group and nation with negative attitude. Doctors, nurse, medical personnel, migrant workers and such other people who come in contact with Covid-19 infected person are facing social stigma because people perceive them as possible carrier and spreader of virus. The main reason for social stigma is that people are knew to this virus. There is so many things to be known about it. When it is new people develop a feeling of fear. People are hesitant to avail health care facility, people are discouraged to adopt covid-19 appropriate behavior, they have been abused and physically attacked all due to stigmatization.

2) Gap in social contact

In order to contain the virus social distancing was encouraged among the people to follow. According to Verma and Prakash (2020) social distancing creates a gap between friends and relatives. As an alternative to face-to-face interaction and contact many social networking apps have been used by the people. But it is worth taking into account for those people who are not in a position to afford smartphone. In such case, there is less social interaction with their relatives and friends. Man is a social animal. People are always in search of companion for interaction, help and support. Social contact gap leads to Stress, anxiety and despair.

3) Older person

Old age person is one of the groups that are affected by this Covid-19 pandemic. United Nation (UN) stated that person with chronic health condition like hypertension, cardiovascular

disease and diabetes and old age are more susceptible to the disease. Comparatively speaking older person are less capable of managing themselves they cannot take care of themselves. For some stuff they have to depend on other members of the family. Some member of the family and society perceive them as less important and burden for the family and society as a result they may not receive the sufficient attention and care. Physical distancing on long term basis may led to Isolation.

4) Person with Disabilities

Person with disability face many problems even during normal time. This pandemic adds more problems to the person with disability. They cannot maintain physical distancing, cannot sanitize their space and wash their room. United Nation reported that they also could not avail much health care facility due to lack of availability and affordability as well discrimination. Due to the need to maintain covid-19 protocol they could not receive much attention from other people.

5) Education

The closure of school due to pandemic have impacted around 25 crore Indian students as per the estimate of UNICEF. Shutting down of educational institution forced the students, teacher, parent and other stakeholder to switch from conventional classroom to blended mode of learning. Online mode of learning which was adopted as alternative to conventional learning brings out Digital divide among the students and teachers. There is a difference in infrastructure, internet connectivity, electricity and computer skills among students and teacher residing in different residential area and working in different type of institution. As per the data provided by the Government in 2019 only 24 Percent have access to internet. There is a difference between rural and urban resident when it comes to internet access. As per 2019 survey of Government, 42 Percent of Urban and only 15 Percent of rural India have access to internet.

6) Unemployment

Centre for monitoring Indian Economy (CMIE) has revealed that during the month of April the unemployment rate has crossed 23.5 Percent and remained at 21.7 Percent in May, 2020. The unemployment rate started coming down at 10.2 Percent in June, 7.4 Percent in July and slight rise to 8.3 Percent in August. CMIE also reported that there is an increase in unemployment rate which was 8.6 Percent in April 11, 2021 the rate previously it was 6.7

Percent two weeks ago. The data shows that there is a fluctuation of rate. There is instability and inconsistency of unemployment rate. The second wave of coronavirus brings out fear and uncertainty among the people especially the migrant worker.

7) Tourism and hospitality Industry

During the Covid-19 Pandemic among the affected sectors Tourism industry appears to be worst affected sectors impacting various related sectors like hospitality, tour operator and travel agencies. Shetty (2020) reported that according to Federation of Association in India Tourism and Hospitality (FAITH) an approximate to 90 Percent 52,000 travel agents, 115,000 tour operator, 15000 adventure, 911000 tourist and transporters, 53000 hospitality and five lakh restaurants are facing the impact meted out to them by the Coronavirus pandemic. Tourism industry suffering loss brings impact on the revenue accumulation from this sector. Bhanu and J.P. (2020) reported that after January 2020, the revenue receive from tourism has come down lesser than 50000 INR million as per Department of tourism. Although India imposed Lockdown in March 2020, but even before the Lockdown many restrictions were imposed. Tourism is one of the contributors to the Country's Economy.

8) Cultural and Religious festivals

India is a land of Diversity. People of different culture and religions live in this country. Observation and celebration of festivals and events is a matter of salvation and religious obligation in India. But due to the Covid-19 pandemic lockdown was imposed to contain the virus and covid-19 guidelines come into force. As an alternative means to the conventional gathering many online meeting platforms such as Google meet, zoom meeting app and other are being used to continue Celebrating festivals. Religious holy places where pilgrims travel to take blessing were also shut down maintaining the covid-19 protocol.

9) Media & Entertainment Industry

The effect of Covid-19 did not leave the entertainment industry. Thousands of employees in this industry become jobless. The shooting of the movies was stopped. Release of many movies was put on halt. Some movies were released on digital platform like Netflix, Amazon Prime, and HotStar etc. Many of the print media like Newspaper, Magazines and other publishing got decreased in their production and sales. Khan (2020) in his study found that out of 110 people, 54% of the respondents have fear of job loss and 56% of the employees have got their income decreased and it also reported that 55% of the respondents face network issue while working online. According to the report of Credit Rating Information Service of India

Limited (CRISIL) the revenue of the Indian media and industry is estimated to get decreased by 16%.

10) Sports

The need to comply to the Covid-19 protocol, many of the matches and tournaments had to play behind closed doors. The fans could not watch the match in the stadium and extend their support for their teams. Many of the scheduled matches had to cancel to mention few Indian super League (ISL) a football competition of the country's top league had to play in an empty stadium in Goa in March, I-League season also had to be halted, and many cricket matches had been cancelled. India's football matches for World cup qualifiers have also been postponed. Desai a partner in Deloitte India stated that Sports is very unlikely to return fully the way it was before Covid-19 pandemic. Simon Chadwick who is a director of the Centre for Eurasian sports industry a Lyon based said that this pandemic could lead the smaller league and sports the end however the bigger sporting tournament and brand like IPL, NBA etc. could somehow survive. Desai a partner in Deloitte India stated that in India sports other than Cricket would find it difficult to return to normalcy as they do not have deep financial pockets.

Conclusion:

Covid-19 pandemic delivered equality to every person in the Society and sector of human endeavor. Covid-19 pandemic indiscriminately affect every human irrespective of race, caste, creed, nationality and class. Effort should be made to remove prejudices from the mind of the people against the older person and person with disabilities. Outmost special attention must be given to them by providing all the health care services and infrastructure, aids that they need. This pandemic Become a source of violation of human rights of many people in the society. Like those people who are older and Person with Disabilities. With respect to Educational sector, there is gap as much as the smartphones availability, electricity supply, digital literacy and good internet connection is concern among the students and teachers living in rural and urban areas. Some measures may be taken in this regard to enable the students to continue learning process during this pandemic. Stigmatization is another issue that needs to be resolved. People should be more open minded and scientific in their approach so that Social stigma victimization of innocent people like Doctors, Nurse, Medical personnel, migrant workers and other could be avoided. Undoubtedly this pandemic has weakened the economy

of the country. The revenue from Media and Entertainment industry, sports and Tourism & Hospitality industry got decreased due to the effect of covid-19 pandemic. People shall learn to adapt to the new normal that is a new way of life, adopting new lifestyle, eating habits, work culture and Covid-19 appropriate behavior and must not revert back to pre-covid-19 pandemic life. People should act more responsibly and accountable for their actions. People shall join hand with the Government in overcoming this pandemic. It is to be remembered that everyone is in the same battle. Lesson learned from Covid-19 shall be treasured and take this difficult time as positive that will help us to prepare ourselves for similar pandemic in future.

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COVID- 19 AND CHANGING DYNAMICS OF INDIAN LIVELIHOOD

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Abstract:

The dreadful spread of the novel Covid-19, widely known as coronavirus, has left no economy in the world untouched and has shattered all the norms of employment that were at play before. India has been under lockdown totally or partially since the inception of this pandemic wherein almost all economic activities experienced a halt at one time or the other. The grim choice between human health and economic health is proving to be fatal in both ways. In its initial predictions International Labour Organization stated approximately 25 million jobs would be lost around the world due to the pandemic, resulting into loss of livelihood amounting as high as \$3.4 trillion by the end of 2020. But by the end of 2020, it reported a loss of 81 million jobs just in the Asia Pacific region causing the vicious cycle of a fall in consumption and disruptions in supply chains leading to drowning national economies. The pandemic's impetus affected employers with largest worker intake i.e. manufacturing, services, tourism, hospitality, travel, and the retail industries, along with small and medium enterprises. Lives or livelihood is the big question before all. The article talks about broad effects of the pandemic on livelihood workers divided into three broad categories.

Keywords: Pandemic, Covid, Employment, Workers, Job, Work, Migration, Gig workers

Introduction:

Every year the Oxford dictionary's office announces the most used word of the year but it was in the year 2020 there was no such addition to the Global English Lexicon for which they explained that this year cannot be summarised in one word. But I am sure we all know that the word that would have made the cut in this list in 2020 is 'corona'. The unprecedented scenario that is still unfolding before the whole world given the mutations of the virus is bringing new challenges before every nation with each passing day.

This is an ironic situation that people are realising the need for social distancing and self-isolation but not all of them have the luxury to follow these norms given the growing concerns

over putting food on the table in this difficult economic and social circumstance brought upon people due to the uncertainty of stability and continuity of employment. The vision of India to become a global super power has been severely wounded. Economists like Kaushik Basu stating that a series of mass sufferings and social revolts will unfold unless the bottom 50% population in India is provided with essential goods and services. People are struggling to meet ends, keep their jobs secure, businesses floating to even just survive. The impact of the spread of this virus has not stopped at the small and medium scale enterprises but also the established business houses have felt the shockwaves of this massive calamity. Businesses are trying new ways of ensuring work continuity. As established entrepreneurs like Stewart Butterfield of Slack Technologies, an American tech giant said “We all know that work will never be the same, even if we don’t yet know all the ways in which it will be different.” The overall impact on livelihood of Indian masses is though colossal, it has been stated here in terms of three broad sections of workers- home sourced workers, migrant labour and gig workers.

Home Sourced Workers

Cities are the engines behind the machinery of economic growth of a nation and these engines are working at significantly slower pace than before but fortunately, they still haven’t come to a halt. The credit goes to the shift of regular work mode to work from home model. These employees who stay in the comfort of their homes and do the office work remotely are called as home source workers, teleworkers, telecommuters, work at home employee, stay at home employee or telecommuting specialist in some cases. Before the pandemic hit, this concept of work from home (now onwards stated as WFH) was prevalent in major corporations, especially the tech giants. It is also called as remote working and when lockdown was first announced and social distancing became mandatory, these were the only corporations to adapt the mass WFH set up and lead the way for other businesses to implement the same without hampering productivity, profits and saving millions of precious man hours at the same time ensuring safety of their work force. Using the available technical infrastructure, these corporations were able to connect their thousands of employees with each other and ensure continuity of work. It benefitted the employees too since they were safe from losing their jobs. It is always better to work differently on your existing job than losing one when the job market is not exactly flourishing.

The new set up has opened doors for women who were engaged in just household chores, unable to utilise their full potential by going out to work. They are now eligible for

various jobs because of WFH mode that allows making money while still being at home. It is expected that this will strengthen their position as an individual in life and in family at the same time pushing gender equality at work. Number of employees finding comfort in this set up is on the rise since there are lesser distractions like office politics, bureaucracy, no commuting combined with additional advantage of informal attire and couch comfort, etc. From the employee perspective, this shift is massive since their work life balance has drastically improved. They are free to choose from options that did not exist before like choosing where they want to live, what city they want to work from and exploring other new facets of the current flexibility. Moreover, in India where high prices and cost sensitivity co-exist, the savings done by working from home is a major factor that's making employees as well as the companies happy. Employees save highly on commuting cost, formal clothing and food expenses, etc. and companies have seen a steep fall in expenses like maintenance of physical infrastructure, electricity, travelling allowances, routine petty expenses and at office employee perks, etc. The travel time saved is being put towards work by the employees, which has benefitted the companies because it is an addition to company's total man hours at work per year without any additional cost.

But all that glitters is not gold and the WFH set up comes with its own side effects that need to be addressed in order to maintain the same level of productivity from all employees at least until the end of this pandemic if not in the long run with corporations adopting WFH mode forever. Some employees find it difficult to WFH in the middle of chaos, with smaller homes and large families with children. There is weak infrastructure in terms of poor connectivity, unavailability of internet connection for employees who have gone back to their towns or villages, etc. India ranks poorly on internet connectivity with an average download speed of 38 mbps compared to the world average of 78 mbps. Similarly, forced isolation, lost social contact, unpleasant information about illness or demise, etc. is showing negative impact on the mental health of employees, especially the young ones who are new to the work force. Employees are seeing extended working hours and it makes difficult for them to switch off their minds and spend quality time with family which is needed to ensure mental well-being. Benefits of face to face interaction at work seem to be lost. These were helpful for employees for bonding, team building and mutual learning. Non-monetary challenges before employers at this hour of time are plenty. It is necessary to maintain the employee moral high and understanding their

emotional need for space, may be leave during difficulties in their family is crucial. Companies are providing their employees with counselling by expert doctors to ensure good mental and physical health of them and their families. They have an additional cost like upgraded medical benefits and 24*7 supports to solve queries and provide help in these uncertain times.

There is still a ray of hope to get the best of both worlds here. A sudden shift to distributed work has provided the world with a much needed forced opportunity to rethink about how we do our jobs and probably our offices are run. This new 'virtual first' work mode has its unique characteristics but in future, based on change in circumstances, hybrid work mode can be adopted where firstly, the workplace (i.e. work) is divided and spread across homes of employees with skeleton staff still operating from the company office. Data is saved on cloud. Access to this work information i.e. data and its security measures are tailored for different working modes as adopted by a certain corporation. With a combination of necessary infrastructure and employees getting to choose between place of comfort and company offices, WFH can be made seamless in future. Even the delicate interpersonal bonds, mutual learning, etc. is possible to develop with intent and care with combination of virtual and physical mode.

Migrant Labour

As defined by Indian Labour Organisation, migrant workers are those workers, who migrate from one area to another within the state or country in order to get seasonal or temporary or part time work in different sectors. There is imbalance in regional development in India hence the age old migration of workers, in search of job is normal. When the lockdown started in India, businesses and services were paused and millions of workers dependent on them, who prominently earned daily wages, lost their jobs as it became difficult for their

Industry as per National Informatics Centre (NIC) 2008	Self-employed	Regular Wage/ Salary	Casual Labour	Total
Agriculture	74.1	1.2	24.7	100
Mining and Quarrying	9.2	52.3	38.5	100
Manufacturing	43.0	43.6	13.4	100
Electricity and water supply	19.9	76.3	3.7	100
Construction	10.8	5.5	83.7	100
Secondary	26.5	26.1	47.4	100
Trade	70.2	26.2	3.6	100
Transport	43.3	43.3	13.4	100
Accommodation and food services	52.8	36.9	10.3	100
Other services	22.0	74.6	3.4	100
Tertiary	43.0	51.6	5.4	100
Total	52.1	23.8	24.1	100
Estimated workers (millions)	198.2	90.5	91.9	380.6

Distribution of Working People in India in 2018-19 by Employment Type and Industry of Work (Jaisal Status) (in terms of %)
Source: Periodic Labour Force Surveys 2018-19

employers to sustain the cost of these workers with no business happening at the moment. Majority of these workers were migrants left with no means to support their families back home or afford living at the current location of their work. This resulted in the biggest movement of migrant workers heading back home and some say that this was as big as it was at

the time of partition of India and the figure of migrant workers was so high that combined together it could more than the population of most nations. The latest available data by government about India's internal (within country) migration is from the 2011 Census, which is too ancient and this exodus in question indicated the latest numbers are far ahead of this data. As per the Census, India had 45.6 crore migrants in 2011 i.e. 38% of its entire population and 99% of total migration was internal i.e. domestic who are involved in different types of work.

Pandemic has created deep impacts on the livelihoods of the migrants which can be analysed in various terms. The first one being the condition of female workers. Even though women report marriage as the reason for migration, they immediately enter into jobs in the newly migrated area while still struggling with social, economic and political factors. As a result they appeared to be the bigger chunk to lose their jobs as compared to men. This put their present standard of living (which is already poor) in danger, risked social security and safety, widening the gender gap in employment. Majority of migrants do not have any backup at hometowns as well and hence their loss of job soared up the number of their unpaid loans and informal debts gone bad. It created financial pressure on them followed by mental stress that lead to rise in alcoholism, depression. Given the dynamics of typical rural family with poor means and less or no education, women and children became the prime victims. People are being pushed into sex trade, trafficking, exploitation, bonded labour, child labour and other even more unfavourable trades to simply survive. The larger long term impact on the Indian workforce with mental health of so many people disturbed, needs to be taken into account and an action plan with preventive measures must be put in motion. The vicious cycle of malnourishment and weak immunity will follow the poor and inadequate diet. It will likely result in increased infant and child mortality.

Seasonal workers employed in agriculture and allied activities form a large part of migrant labourers in India. These labours take upon rural to rural inter district and interstate seasonal migration. They are one of the most deprived and severely impacted strata of the society in the lockdown due to their restricted mobility. Demand for agricultural raw material fell during lockdown and supply and logistics chains got disturbed. As a result these workers remained underpaid and even in some cases unpaid. They had no work and thus the cost of

living became unaffordable. Many such workers had to sell whatever meagre assets or belonging they had losing their only safety net in times of emergency.

Attempts were made to improve the migrant situation in many ways. Yet, there is still a long way to go. Creating a database of migrant workers is step one as it will lead the way for job creation, implementation of schemes, framing updated rules and regulations to protect interest of these workers. Number of people turning up to avail various support schemes skyrocketed. According to Indian Express, the data available on April 1, 2021 showed that 11.17 crore individuals availed the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in 2020-21 as compared to 7.88 crore in 2019-20 which showed a rise of 41.75 Percent. Scope of workers covered under this scheme can be increased to make it more inclusive. Facilities can be made to open and connect bank accounts of these workers as they are mostly illiterate and unaware. Improvements can be made to the amount of compensation to cope with inflation rate. *Pradhan Mantri Gareeb Kalyan Yojna (PMGKY)*, a rural public works scheme, was also launched to provide relief to these people by ensuring food security, social security and monetary aid through public distribution system (PDS) and Direct Benefit Transfers (DBT). This has around 42.1 crore beneficiaries from different backgrounds. It also aimed to provide employment to returning workers in their home states. Government announcements ensuring ration card portability, a tax holiday for affordable rental housing projects for these workers were a relief but their reach and long term effectiveness is still in question.

Amidst this chaos Haryana government notified a law in March 2021 that reserved 75% of private jobs for local people. The same was considered and even followed by few other states but the issue here was that state job reservations are applicable to formal employment only so migrant workers were to receive no benefit of these provisions. If implemented in more states, this will also reduce job opportunities for incoming migrants from other states making their life tougher since these workers are already unskilled or semi-skilled and so they qualify for very limited number of jobs. This demands drastic changes be made to the migrant policy with emphasis on following points –

- ⇒ Widening the scope of migrants with segregation of labour as skilled, semi-skilled and unskilled.
- ⇒ Stricter enforcement of labour laws with special provisions to safeguard women and children.

- ⇒ Infrastructure and resource utilisation to be rigorously improved for development of human resource with special focus on semi-skilled and unskilled workers.
- ⇒ Migrant workers to be covered under employment protection laws, social protection schemes and informal employment to be brought under the purview of law.
- ⇒ Employers' accountability to be considerably increased to cover aspects of employment beyond the ones that are directly linked with the job.

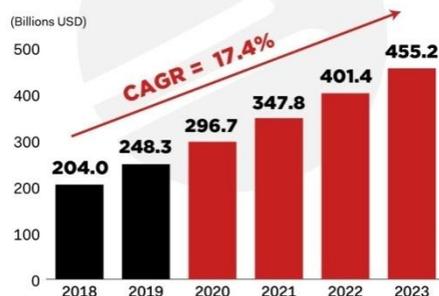
It is also necessary to create buoyant food systems that could reduce food insecurity and encourage people to look for jobs at local level. This is possible only if balanced regional development is ensured. It is a long term task but steps can be taken from now itself by joining with private sector. There is disparity in development of agricultural as well which results in regional variation in the cropping patterns. This affecting fair wage rates boosts movement of migrant agricultural labourers in search of employment; hence balanced development should not be limited only to the industrial sector. This pandemic has shown that be it academia, bureaucracy, or the political class, nobody can ignore migrant labourers due to its deep rooted effect on the Indian economy as a whole.

Gig Workers

Gig economy is a labour market where short-term contracts or freelance work prevail as opposed to permanent jobs and according to Webster dictionary a gig worker is a person who works temporary jobs typically in the service sector as an independent contractor or freelancer. This is not a new concept but it has gained due recognition recently. They get paid per job done. It is also referred to as informal employment. They are mostly on-call workers and temporary workers, independent contractors, online platform and contract firm workers. The pandemic resulted into large scale loss of traditional jobs across all sectors but expanded the horizon of gig economy which is also known as sharing economy, mesh economy

Projected Gross Volume of the Gig Economy

The Gig Economy is projected to grow to **\$455 B by year-end 2023** in Gross Volume Transactions.



or on-demand economy. There is a lot of uncertainty as to the future of gig economy in India since lot of gig workers are unable to get as many jobs as they would get before the pandemic hit but according to experts, at present with work becoming remote, there soon will be an increase in the gig workforce, expanding to several new sectors. Besides, the fall has been seen

only in select sections of gig economy. Freelancers or contract worker in digital advertising, marketing, graphic designing, delivery services, etc. has seen flooding of opportunities and based on these variety of jobs the gig economy can be broadly classified into physical and digital. This year's *Economic Survey* noted that India is becoming one of the world's largest gig economies due to its large number of human resource engaged in digital gig work. The Associated Chambers of Commerce and Industry of India (ASSOCHAM) has stated in a projection that India's gig economy would grow at a compounded annual rate of 17% to reach \$455 billion by 2023, which is more than the GDP of most nations.

Gig workers can be broadly divided in two categories:

- a. **Labour Based Workers:** These are uneducated, unskilled or semi-skilled workers who completely depend on gigs for earning their livelihood. These belong to the poor strata of the economy. They generally perform jobs based on physical labour. For example – drivers, house helps, street vendors, utility based workers, etc.
- b. **Product or Service Based Workers:** These are skilled and educated gig workers who use gigs as a secondary source of income and do not fully depend on it. Their jobs involve providing service or products to clients of employer. They are thus comparatively safe from the side effects of being a gig worker. Some highly skilled product or service based gig workers earn huge sum of money using their talents. For example- artists, digital marketers, graphic designers, animators, online educators, etc.

It is obvious that the first category of gig workers was hit harder in the pandemic. Economic activities which gave rise to these gig, came to a stop. Number of daily commuters and business travellers killed the jobs of people who worked in support of these services like, street vendors, tea stalls, tiffin and mess services, shoe polishing, cab drivers, babysitting service, office maintenance, etc. Different studies show that around of 45 Percent of gig workers have resorted to reduction in their spending and about the same number have borrowed during the pandemic because of loss of jobs or reduced compensation. With drastic fall in income they are concerned for their capacity to repay debt. Family members dependent on the sole gig worker, are forced to look for jobs in an already shrinking economy and this is resulting in children having to drop out of school, girls even married off in some cases, women forced to work into unsafe environment. Many are unable to afford medical care if needed and it is becoming increasingly difficult to make ends meet. Loss of savings and assets is nowhere to be counted as there is no immediate cash flow for basic necessities.

The gig economy in India is unregulated to a great extent. Different platforms, through which gig workers receive work, treat them as contract workers. These contracts are drafted in such a way that the employers remain free from lot of their responsibilities towards their employees like providing minimum wages, overtime compensation, annual leave, severance pay, pension pay, employee provident fund, etc. In the current adverse situation and cut throat competition, the workers are working day and night in exchange of meagre sum on any job they can get. As a result employee morale is at all-time low and with confidence level falling, people might experience loss of creativity over a period of time, which is not a good sign from the point of view of nation's human resource as a whole. There are no clear norms to safeguard the workers in informal economy and there is no redressal mechanism. In addition to this, the basic requirements of female workers are completely ignored. India's gig economy has a long way to go before it can be a gender-inclusive economy. Efforts to ensure women's safety and health needs by employers in this sector are nowhere to be seen. There are no provisions for maternity leave, sick leave, compensation for injury on work, etc. Hence, if employee takes a leave for any of these reasons; she or he is not paid for the day. That's why workers work in terrible conditions risking their lives.

There is other section of workers, majority of who is a part of digital gig economy. They work on own terms, have flexible working hours and get paid handsomely. They enjoy this bargaining power due to their education, skill and talent. But even they suffer from unavailability of benefits like health cover, insurance, EPF, etc. Many gigs are performed remotely from place of worker's choice so the youngsters, who form a large part of this economy, use this flexibility to travel. It is advantageous for ladies since they can earn money while staying at home looking after the family front.

Changes are occurring with the structure of gig economy is becoming clearer with time. There was a proposal to form a database of gig workers in the union budget of India for FY 2021-22 for effective data collection and for devising their welfare policies. This will help to make sure gig workers are provided with transparency, availability of fair working conditions, regular payments and accountability of recruiters. Code on Social Security, 2020 was passed by the parliament which includes workers outside the 'traditional employer-employee relationship' and it aimed to provide social security benefits to gig workers. To tap the infinite potential of our human resource and opportunities that gig economy has to offer, we must

invest skill development programme, increase access to education and training for our most vulnerable workers.

Conclusion:

It is said rightly that “the secret of change is to focus all of your energy, not on fighting the old, but on building the new.” Covid-19 pandemic has brought irreversible changes to the way we work. It rages on in most countries of the world bringing unprecedented challenges before the leaders about ensuring financial stability of their people when health of economies and people’s well-being are at stake. People who were working from home, largely the white-collar workers, continue as before and might resume as it is post pandemic. Their number will rise and WFH may become the norm in much government and private offices. In the long run, their close connection with gig economy will bring a boom for gig workers too. However, a sophisticated system has to be designed to protect interest of gig workers. Maximum uncertainty is about the status of our domestic migrant workers. With lockdowns being lifted and implemented back again, their future seems vague. Government’s efforts to protect them are a welcome move and it shall prove to be a game changer in the long run if the need for upgrading our worker databases and flexible policy making are addressed at godspeed. Mankind is battling a storm of uncertainties. Where some had to take the blow of the wind, others have started to flow with it. The unbeatable human spirit is being tested to its limits in this pandemic but with sincere and collective efforts, mankind shall triumph.

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A REVIEW ON: INDIAN SOCIETY AND COVID-19

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Abstract:

The Corona Virus Disease(COVID-19) is quickly spreading across Wuhan (China) &Globally. Due to the problems caused by this particular health crisis all over the world, the World Health Organisation (WHO) has declared it as a global pandemic. The corona virus a pandemic has made us realise that we all are connected and this entire world is a family. The lockdown has been recognised as the only method to control the spread of the pandemic and almost every country has adopted this method. Also, the similar travelling, Masking face other crowded activities have also been stopped in these situations. Indian society has launched a compaign; together at home in partnership with the World health organization (WHO).All Citizens together will fight against COVID-19.

Keywords: Covid-19, Social Distance, lockdown, Mask

Introduction:

The world is going through a cycle that some have called "covidisation" COVID-19 began from one city of China in December 2019, however in a limited capacity to focus time, it covered practically everywhere on the world (WHO, 2020b). The COVID-19 has immersed practically every one of the nations of the world so quickly that there were 4,893,186 contaminated cases with all out 323,256 passings. The United States of America had the most noteworthy number of contaminated cases 1,501,876 with 90,203 fatalities, the most elevated on the planet as on May 21, 2020 (WHO, 2020b). The first instance of COVID-19 in Quite a while was enrolled on January 30, 2020 in Thrissur, a city of Kerala when a female understudy got back from Wuhan, China (Rawat, 2020)

It seriously affects worldwide and public economies independent of the degree of infection sway on individuals of individual countries. The tale Covid has no line, no religion and spread past cast and belief. It is profoundly infectious in nature and effectively capricious. Coronavirus is a zoonotic infection with middle host. Albeit the moderate well spring of

beginning and move to people isn't plainly known. Middle of the road has for SARS-CoV is palm civet and camel while the conceivable halfway host for SARS-CoV-2 is pangolin or snakes. The hold have for all the three is bat. Bat conveys so numerous infections and around 200 Covids without becoming ill. So the essential method of transmission is from bats to middle of the road host to humans. Maintaining social separating would be a test in jam-packed regions, for example, ghettos. Social separating measures are required to be set up for a supported timeframe to restrict the spread of COVID-19

WHO has distributed direction on changing general wellbeing and social measures for the following period of the COVID-19 reactions. A few governments have recommended that the recognition of antibodies to the SARS-CoV-2, the infection that causes COVID-19, could fill in as the reason for an 'resistance visa' or 'hazard free endorsement' that would empower people to head out or to get back to work accepting that they are secured against re-infection. There is as of now no proof that individuals who have recuperated from COVID-19 and have antibodies are shielded from a subsequent disease.

WHO continues to review the evidence on antibody responses to SARS-CoV-2 infection. Most of these studies show that people who have recovered from infection have antibodies against virus. However, Some of these people have very low level of neutralizing antibodies in their blood, Suggesting that cellular immunity may also be critical for recovery. At this point in the Pandemic, there is not enough evidence about the effectiveness of antibody-mediated Immunity to guarantee the accuracy of an immunity passport or risk-free certificate. People who assume that they are immune to a second infection because they have Received a positive test result may ignore public health advice. The use of such Certificates may therefore increase the risks of continued transmission. Amidstlockdown in Indian society, multiple issues related to social, educational, economical, political, agricultural, psychological levels and many more have been noticed which has created the devastating impact on the lives of the people. Environmental change is one of the biggest challenges of the 21st century. In spite of all their efforts to restore the nature during the last few decades, humans could only move a few steps forward, not up to the commendable extent. Most of these studies show that people who have recovered from infection have antibodies against virus.

Advantages:

- Cooperation enforced
- Quick Reduction of pressure on health system
- Increase the capacity of health.
- Reduce societal and economic impact



Disadvantages:

- Requires Public cooperation for testing and quarantine
- PCR only effective if currently infected
- High Societal and economic costs
- Nervousness to the patient

Covid-19 and Society:

The COVID-19 episode influences all sections of the populace and is especially negative to individuals from those gatherings of people in the most weak circumstances, keeps on influencing populaces, incorporating individuals living in neediness circumstances. For instance, vagrants, since they might be not able to securely shield set up, are profoundly presented to the risk of the infection.

Because of Covid-19 lock down, the assets are being devoured in a restricted way. Individuals have understood that their endurance needs are less however for status in the general public they were squandering the assets. I would say that the lockdown is showing us the viable exercises how to accomplish the Sustainable Development Goals (SDGs). The worldwide closure is permitting the planet to mend and restore itself against the anthropogenic exercises.

These methods should be used during corona period

- ✓ Wear Mask while going out.
- ✓ Maintain at least 2 meters of social distance.

- ✓ Be away from the person who have Cold, Cough and fever.
- ✓ Walk up and down the stairs
- ✓ Do some exercise
- ✓ Dance to Music for a few minutes
- ✓ Seek more ideas and resources online
- ✓ Sanitized always to yourself

Impact of lockdown on employment:

- A record number of 122 million people lost their livelihood till April 2020.
- Out of 122 million livelihood losers.
- Nearly 75% were small traders.
- 15% were salaride people.
- 10.5% were self employed.

Centre for monitoring Indian economy:

- Unemployment rate was at record high of 28%.

Impact of the lockdown on education:

- A massive exodus a student from private school. At least one lack student left expensive private school for cheaper government school in Haryana.
- Financial crisis in families resulting from loss of livelihood was the reason behind this exodus.

What people have done during the Corona period is mentioned in below:

1. Entrance to have mandatory hand hygiene and thermal screening provision.
2. Only asympathetic person to be allowed on the premises.
3. Only person wearing face cover / mask to be allowed entry.
4. All members, visitors and staff to use Aarogya setu app.
5. Posters / standees on covid-19 preventive measures to be displayed.
6. Audio and video clips on covid-19 preventive Measures to be played.

The covid-19 pandemic has resulted in several economic and social impacts around the world.

Common socio-economic impacts of COVID-19

- Social distancing and self-isolation.
- Travel restrictions.
- Reduced workforce across all economic sectors.

- Job loss.
- School closure.
- Disruption of normal life of children.
- Decreased demand for commodities and manufactured products.
- Increased need for medical supplies.
- Increased demand in food sector.
- Panic-buying and stockpiling of food products.
- Domino effect on health, healthcare and nutrition.
- “Infodemic”: spread of panic and fear through social media.
- Xenophobia against specific ethnic/geographic groups.
- “COVIDIZATION” of academic research: undermining other areas of research and scholarship.
- Poor people, homeless people, refugees, migrants are disproportionately affected by the health and economic impacts of COVID.

DO	DON'T
Keep distance and say hi	Shake Hands
Cook or order your food	Go to bars, restorant or crowded places
Wash your hands	Touch your mouth and face
Listen to healthcare workers instructions at all time	Do not hug, touch the patients
Stay home for 14 days from the time you return home from international travel	Use public transpirtainons, taxis services after returning from abroad
Clean your hands properly with alcohol based sanitizer	Go out if u feel unwell
Limit the time you spend in the patients room	Do not use patients toilet
Wear a mask when you go in public	Cough sneezing without cover your mouth

Conclusion:

Stay Home Stay Safe and Help to Stop the spread of corona. Wash your hand throughtly with the soap. Cover your face when coughing and sneezing. Avoid the contact with crowd. We should strictly follow all guidelines issued by the government stay at home.

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CORONA VIRUS: A DETAIL STUDY ON COVID -19

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Abstract:

In December 2019, many persons from china (Wuhan) were hospitalized with symptoms like pneumonia. As the increasing number of persons admitted with the same symptoms started to increase, the causative agent was isolated from the sample, and initially, it was called 2019 novel corona virus i.e. 2019-nCoV, and spread globally resulting in a pandemic situation. The virus is spread from one person to another via a droplet of the respiratory tract during sneezing and coughing. Within 2-14 days to show the symptoms to the infected person after entering the virus into the body. According to World Health Organization (WHO), infection is known as COVID-19 a pandemic on March 11, 2020. Now a day's vaccine has been available for preventive approaches are the best way to treat against the COVID.

Keywords: COVID-19, Pandemic, Vaccine, Virus, Treatment, Medication

Introduction:

Coronaviruses are a type of RNA viruses that can cause diseases in mammals and birds. In humans and birds, they cause respiratory tract infections that can range from mild to lethal. Mild illnesses in humans include some cases of the common cold (which is also caused by other viruses, predominantly rhinoviruses), while more lethal varieties can cause SARS, MERS and COVID-19. In cows and pigs, they cause diarrhoea, while in mice they cause hepatitis and encephalomyelitis.

Coronavirus (CoV) belong to the genus Coronavirus in the Coronaviridae. All CoVs are pleomorphic RNA viruses characteristically containing crown-shape peplomers with 80-160 nm in size and 27-32 kb positive polarity. Recombination rates of CoVs are very high because of constantly developing transcription errors and RNA Dependent RNA Polymerase (RdRP) jumps. With its high change rate, Coronaviruses are zoonotic microbes that are available in people and different creatures with a wide scope of clinical highlights from asymptomatic course to necessity of hospitalization in the emergency unit; contaminations in respiratory, gastrointestinal, hepatic and neurologic frameworks [1-3].

They were not considered as exceptionally pathogenic for people until they have been seen with the extreme intense respiratory condition (SARS) in the Guangdong province of China

without precedent for 2002 and 2003. Prior to these flare-ups, there were the two most referred to kinds of CoV as CoV OC43 and CoV 229E that have generally caused gentle diseases in individuals with a sufficient resistant framework [4].

Around ten years after SARS this time, another profoundly pathogenic CoV, Middle East Respiratory Syndrome Coronavirus (MERS-CoV) has arisen in the Middle East nations [5]. In December 2019, 2019 novel Coronavirus (nCoV), which is another general medical condition, has arisen in the Huanan Seafood Market, where domesticated animals creatures are likewise exchanged.

History:

It is an RNA virus with diameter ranging from 60nm to 140nm having projections similar to spike on the superficial surface which give its appearance of crown under an electron microscope [2]. There have been two events in the past two decades where in crossover of animal beta corona viruses to humans have resulted in severe disease. The very first occurrence of the virus was in 2002-2003, when a virus from *genera* with its prime origin from bats, crossed over to humans via mediator host of cats from Guangdong province of the country China [2].

First instance of Covid was informed as cold in 1960. As per the Canadian examination 2001, around 500 patients were distinguished as Flu-like framework. 17-18 instances of them were affirmed as tainted with Covid strain by polymerase chain response. Crown was treated as basic non-deadly infection till 2002. In 2003, different reports distributed with the verifications of spreading the crown to numerous nations like United States America, Hong Kong, Singapore, Thailand, Vietnam and in Taiwan. A few instances of serious intense respiratory condition brought about by crown and their mortality in excess of 1000 patient were accounted for in 2003.

This was the dark year for microbiologist. At the point when microbiologist was begun center to comprehend these issues. After a profound exercise they finish up and comprehend the pathogenesis of illness and found as Covid. Be that as it may, till absolute 8096 patient was affirmed as contaminated with Covid. In this way, in 2004, World wellbeing association and communities for infectious prevention and avoidance proclaimed as "state crisis". Another study report of Hong Kong was confirmed 50 patients of severe acute respiratory syndrome while 30 of them were confirmed as corona virus infected. In 2012, Saudi Arabian reports were presented several infected patient and deaths [1–4]. COVID-19 was first identified and isolated from pneumonia patent belongs to Wuhan, china [5–6].

There have been two occasions in the previous twenty years wherein hybrid of creature beta Covids to people has brought about extreme sickness. The main such occurrence was in 2002–2003 when another Covid of the β genera and with beginning in bats moved over to

people by means of the mediator host of palm civet felines in the Guangdong territory of China. This infection, assigned as serious intense respiratory disorder Covid influenced 8422 individuals for the most part in China and Hong Kong and caused 916 passings (death rate 11%) prior to being contained [4]. Just about 10 years after the fact in 2012, the Middle East respiratory disorder Covid (MERS-CoV), likewise of bat beginning, arisen in Saudi Arabia with dromedary camels as the transitional host and influenced 2494 individuals and caused 858 passings (casualty rate 34%) [5].

In the last part of the 1960s, Tyrrell was driving a gathering of virologists working with the human strains and various creature infections. These included irresistible bronchitis infection, mouse hepatitis infection and contagious gastroenteritis infection of pig, all of which had been exhibited to be morphologically equivalent to seen through electron microscopy [5,6].

Progressing research utilizing serologic procedures has brought about a lot of data with respect to the study of disease transmission of the human respiratory Coids. It was tracked down that in mild environments, respiratory Covid diseases happen more regularly in the colder time of year and spring than in the late spring and fall. Information uncovered that Covid contaminations contribute as much as 34% of the all out respiratory viral movement during pestilences. In general, the extents of grown-up colds delivered by Coids were assessed at 15% [7].

While research was proceeding to explore the pathogenicity and epidemiology of the human coronaviruses, the number and importance of animal coronaviruses were growing rapidly. Coronaviruses were described that caused disease in multiple animal species, including rats, mice, chickens, turkeys, calves, dogs, cats, rabbits and pigs. Animal studies included, but were not limited to, research that focused on respiratory disorders. Study focuses included disorders such as gastroenteritis, hepatitis and encephalitis in mice, pneumonitis and sialoadenitis in rats.

Epidemiology:

Human coronaviruses were found by enzyme linked immunosorbent assay in upper respiratory tract secretions taken during 30% of 108 acute respiratory infections experienced by 30 children under age 6 years with recurrent respiratory infections (index group), and during 29% of 51 acute infections experienced by their siblings. Lower respiratory tract infection predominantly wheezy bronchitis occurred in 30% of the index children coronavirus positive infections. Reinfections were common.

Two peaks of infection were seen each year in the late autumn/early winter and in the early summer.

All ages are at risk of getting the illness. This is because the ailment is transmitted through large droplets that result from coughing and sneezing by symptomatic individuals. In some instances, the infection can happen from asymptomatic individuals and before the beginning of symptoms. As of March 2020, the WHO announced that there are about 87,317 cases of COVID-19 globally as well as confirmed cases of deaths is 2,977 [1,8]. This implies that the disease symptoms are mild as only 3.42 Percent of patients with it have died because of the virus. At the same time, the high number of incidences and deaths has been identified in China. It is that 92 Percent of the total number of occurrences has been reported in Asia, mainly China [9]. Importantly, the confirmed incidences are clinically identified and laboratory-confirmed. Further, outside Asia, the number of cases and deaths differs due to the ongoing nature of the disease, population density, degree of testing and reporting, and timing of reducing strategies [6].

The features of COVID-19 are categorized into the host of the virus, transmission mode and incubation period [5]. In the first place, the Chinese horseshoe bat is the natural hosts and the terminal hosts are humans [10].

Also, the transmission is from individual to individual through aerosol droplets. Lastly, the incubation period varies from two to fourteen days. Therefore, COVID-19 cumulative incidence differs depending on the country and incidences have been confirmed in almost all continents. In December 2019, Wuhan City, Province of China, became the centre of an outbreak of novel contagious coronavirus disease (COVID-19) of unknown etiology [11, 12].

Endeavors are in progress to keep on bettering see more about contagiousness, seriousness, and different highlights related with COVID-19 [13]. Apparently a contaminated creature may have first sent the infection to people at a fish market [14,15]. Before long, an auxiliary wellspring of disease was discovered to be human-to-human transmission of the COVID-19 infection [16]. Obviously the COVID-19 disease happens among close contacts and openness to the infection [17]. Ongoing examinations showed that individuals matured ≥ 60 years and the populace with helpless safe capacity like diabetes, cardiovascular illness, persistent respiratory sickness, malignant growth, renal, and hepatic brokenness is at higher danger for extreme COVID-19 than youngsters who may be less inclined to get tainted or, assuming this is the case, may show milder manifestations or even asymptomatic disease [18]. Covid illness 2019 (COVID-19) is spreading quickly across China and is being traded to a developing number of nations, some of which have seen ahead transmission. As indicated by the World Health Organization (WHO), COVID-19 proceeds to arise and addresses a major issue to general wellbeing. On 2 May of March 2020, in excess of 3,000,000 affirmed instances of COVID-19 detailed by the World Health Organization. Of these, more than 240 000 have been

lethal. Around 83,959 cases were affirmed in China, and 4637 passings were affirmed [8]. The developing worldwide count remembers spikes for Korea, Iran, Italy, Spain, France, and Germany.

The momentum flare-up of the novel Covid illness 2019 (COVID-19) in excess of 250 nations has become a genuine danger to the wellbeing of individuals all throughout the planet. Human-to-human transmission of the severe intense respiratory condition Covid 2 (SARS-CoV-2) happens regularly when individuals are in the brooding phase of the sickness or are transporters and have no indications. Temperature increment and daylight can work with the obliteration of SARS-COV-2 and the soundness of it on surfaces. At the point when the base surrounding air temperature increments by 1 °C, the total number of cases diminishes by 0.86%. As indicated by the most recent proof, the presence of Covid in the sewer has been affirmed, however there is no proof that it is sent through sewage or defiled drinking water. Likewise, SARS-COV-2 transmission through food, food bundles, and food controllers has not been distinguished as a danger factor for the infection.

Sources:

CoVs have been defined as a novel respiratory tract virus in the samples collected from the individuals who present symptoms of respiratory tract infection in 1962.[18] This is a large family of viruses that are common in many different animal species, including camels, cattle, cats, and bats.

Rarely, animal CoVs can infect humans and, as a result, may spread among humans during epidemics such as MERS, SARS, and COVID-19. [13-16] At the onset of major outbreaks caused by CoVs, palm cats have been proposed to be a natural reservoir of Human CoVs for SARS and dromedary camels for MERS.[3]

However, more advanced virological and genetic studies have shown that bats are reservoir hosts of both SARS-CoV and MERS-CoV and before these viruses spread to humans, they use the other responsible animals as intermediate hosts. Studies have reported that most of the bat CoVs is the gene source of alpha-CoV and beta-CoVs, while most of the bird CoVs is the gene source of gamma-CoVs and delta-CoVs.[3] In recent studies, it has been observed that the novel virus causing epidemics coincides with the CoV isolated in bats. Presence of wild animal trade in Huanan Seafoods Market where the first cases appeared supports this finding. [6, 10]

Transmission:

Peoples can get the infection through close contact with a person who has symptoms from the virus includes cough and sneezing. Generally, corona virus was spread via airborne

zoonotic droplets. Virus was replicated in ciliated epithelium that caused cellular damage and infection at infection site. According to a study published in 2019, Angiotensin converting enzyme 2 (ACE.2), a membrane exopeptidase in the receptor used by corona virus in entry to human cells [12–14].

COVID-19 can be transmitted through direct exposure to infected animals, human-to-human, and environmental contamination.

Firstly, the initial cases of COVID-19 are associated with direct contact to infected animals and this was experienced at the seafood marketplace in Wuhan, China [2]. Moreover, the virus can spread from one person to another, and this is considered to be the main form of transmission [4]. It is that the interaction with those with the disease can lead to getting the ailment as spreading happens from the release of respiratory droplets, mainly through coughing. Therefore, close contact with individuals with COVID-19 can result in transmission. In some instances, there is a possible spreading in closed areas because of raised aerosol concentrations [3]. Several studies support that the COVID-19 virus has a development period of two to fourteen days [1]. Equally important, the virus can spread through touching contaminated surfaces. This happens when it touches these surfaces and then transfers the virus to mucous membranes in the upper parts of the body, especially mouth, eyes, or nose [7]. It implies that the virus remains active in surfaces that individuals are likely to touch on a daily basis. As a matter of fact, environmental contamination is more likely to be a possible source of infection in environments where there is heavy viral contamination, mainly in an infected person's household [18]. As research was done in Singapore reveals that viral RNA is detected on nearly all surfaces, such as handles, light switches, toilet bowl, and bed and handrails [2]. Necessarily, COVID-19 can persist in surfaces as it has been tested and confirmed that this virus may persist on inorganic surfaces for up to six to nine days without disinfection [20]. Hence, COVID-19 can be transmitted in different ways, and this calls for the need for individuals to be aware of its transmission so as to keep them safe all the time. Currently, the major source of infection is patients which are already affected with COVID-19 and some patients who are asymptomatic could become carrier of infection, close approximate contact and respiratory droplets are the major spreading route & specific awareness should be given to family members and asymptomatic carriers (3, 19). Recently SARSCOV- 2 has been recognized in the air in ICU, so a long-term vulnerability in comparatively sealed ICU surroundings may result in aerosol communication.

Etiology:

Covids have a place with the Coronaviridae family in the Nidovirales request. Crown addresses crown-like spikes on the external surface of the infection; in this manner, it was

named Covid. Covies are minute in size (65-125 nm in diameter) and contain a solitary abandoned RNA as nucleic material, with a size going from 26 to 32 kilobases (kb) long. The subgroups of the Covid family are alpha (α), beta (β), gamma (γ), and delta (δ) [1]. A few Covies can taint people, similar to the worldwide endemic human Covies HCoV-229E, HCoV-NL63, HCoV-HKU1, and HCoVOC43 that will in general reason gentle respiratory infection, and the zoonotic Middle East respiratory condition Covid (MERS-CoV) and extreme intense respiratory disorder Covid (SARS-CoV) that have a higher case casualty rate [2]. In late December 2019, a group of patients was conceded to clinics with an underlying finding of pneumonia of an obscure etiology.

Etiologic examinations have been acted in patients who applied to the clinic because of comparative viral pneumonia discoveries. The regular history of high-hazard creature contact in the clinical accounts of these patients has fortified the probability of a disease communicated from creatures to people [3, 9]. On January 22, 2020, novel CoV has been proclaimed to be started from wild bats and had a place with Group 2 of beta-Covid that contains Severe Acute Respiratory Syndrome Associated Coronavirus (SARS-CoV). Despite the fact that COVID-19 and SARS-CoV have a place with a similar beta Covid subgroup, similitude at genome level is just 70%, and the novel gathering has been found to show hereditary contrasts from SARS-CoV [10]. Many human coronaviruses (HCV) isolates have been reported to cause upper respiratory tract infections in both children and adults' [2]. These isolates all fall into 1 of 2 distinct antigenic groups, [1, 3, 4] named after the prototype strains, HCV 229E [5] and HCV OC43.[6] Coronaviruses cause wheezing in young asthmatic Children [7] but only rarely cause wheezing in normal children. [8-10]. The clinical features of HCV OC43 infection in childhood have been well described," but not those of HCV 229E.

Since, Coronaviruses are zoonotic pathogens that are present in humans and various animals with a wide range of clinical features from asymptomatic course to requirement of hospitalization in the intensive care unit; causing infections in respiratory, gastrointestinal, hepatic and neurologic systems. [1-3]

Pathogenesis:

All ages are susceptible. Infection is transmitted through large droplets generated during coughing and sneezing by symptomatic patients, but can also occur from asymptomatic people and before the onset of symptoms.[12] Studies have shown higher viral loads in the nasal cavity as compared to the throat, with no difference in viral burden between symptomatic and asymptomatic people.[13] Patients can be infectious for as long as the symptoms last and even on clinical recovery. These infected droplets can spread 1–2 m and deposit on surfaces.

The virus can remain viable on surfaces for days in favourable atmospheric conditions, but are destroyed in less than a minute by common disinfectants such as sodium hypochlorite and hydrogen peroxide.

Infection is acquired either by inhalation of these droplets or touching surfaces contaminated by them or then touching the nose, mouth, and eyes. The virus is also present in the stool, and contamination of the water supply and subsequent transmission via aerosolization/ feco–oral route is also hypothesized.[14] The incubation period varies from 2 to 14 days (median 5–7 days). Studies have identified angiotensin receptor 2 as the receptor through which the virus enters the respiratory mucosa. The basic case reproduction rate is estimated to range from 2 to 6.47 in various modeling studies. [15-16].

Coronaviruses are viruses whose genome structure is best known among all RNA viruses. Two-thirds of RNA they have encodes viral polymerase (RdRp), RNA synthesis materials, and two large non-structural polyproteins that are not involved in host response modulation (ORF1a-ORF1b). The other one-third of the genome encodes four structural proteins (spike (S), envelope (E), membrane (M) ve nucleocapsid (N), and the other helper proteins. [12,13] Although the length of the CoV genome shows high variability for ORF1a/ORF1b and four structural proteins, it is mostly associated with the number and size of accessory proteins. [12,13] The first step in virus infection is the interaction of sensitive human cells with Spike Protein. Genome encoding occurs after entering to the cell and facilitates the expression of the genes, that encode useful accessory proteins, which advance the adaptation of CoVs to their human host.[13] Genome changes resulting from recombination, gene exchange, gene insertion, or deletion are frequent among CoVs, and this will take place in future outbreaks as in past epidemics. As a result of the studies, the CoV subfamily is rapidly expanding with new generation sequencing applications that improve the detection and definition of novel CoV species. In conclusion, CoV classification is continually changing. According to the most recent classification of The International Committee on Taxonomy of Viruses (ICTV), there are four genera of thirty-eight unique species.[14] SARS-CoV and MERS-CoV that attach to the host cell respectively bind to cellular receptor angiotensin-converting enzyme 2 (SARS-CoV associated) and cellular receptor of dipeptidyl peptidase 4 (MERS-CoV associated).[15] After entering the cell, the viral RNA manifest itself in the cytoplasm. Genomic RNA is encapsulated and polyadenylated, and encodes various structural and non-structural polypeptide genes. These polyproteins are split by proteases that exhibit chymotrypsin-like activity. [13, 15] The resulting complex drives (-) RNA production through both replication and transcription. During replication, full-length (-) RNA copies of the genome are produced and used as a template for

full-length (+) RNA genomes. [12, 13] During transcription, a subset of 7-9 sub-genomic RNAs, including those encoding all structural proteins, is produced by discontinuous transcription. Viral nucleocapsids are combined from genomic RNA and R protein in the cytoplasm and then are budded into the lumen of the endoplasmic reticulum. Virions are then released from the infected cell through exocytosis.

The released viruses can infect kidney cells, liver cells, intestines, and T lymphocytes, as well as the lower respiratory tract, where they form the main symptoms and signs. [15] Remarkably, CD4 lymphocytes were found to be lower than 200 cells/mm³ in three patients with SARS-CoV infection.

MERS-CoV is able to affect human dendritic cells and macrophages in-vitro. T lymphocytes are also a target for the pathogen due to the characteristic CD28 rosettes. This virus can make the antiviral T-cell response irregular due to the stimulation of T-cell apoptosis, thus causing a collapse of the immune system. [16,17].

All coronaviruses develop in the cytoplasm of infected cells, budding into cytoplasmic vesicles from the endoplasmic reticulum. These vesicles are either extruded or released from the cell within the same time frame, and then the cell is destroyed.

Clinical characteristics:

Ground on some other studies [3, 7, 21] patient diagnosed with COVID-19 usually manifests Dyspnea after 1 week of virus onset in the body and out of some more serious cases, could rapidly proceeds towards “Acute Respiratory Distress Syndrome”, show some coagulation disorders, can underwent shock (septic shock), can underwent refractory metabolic acidosis. In addition to above patient diagnosed with corona virus and comorbid encephalitis should not be missed, as chances of development of cerebral congestion, edema and neuropathy is more in patients diagnosed with covid-19. Some of the early neurological features shown by patient affected with covid-19 are; headache, dizziness, anosmia, myalgia, impaired level of consciousness [3]. Some of the markers that are helpful in diagnosing covid-19 are;

- (1) Decreased in count of peripheral blood lymphocyte.
- (2) Progressive elevation in peripheral blood inflammatory factors such as IL-6 and the C-reactive protein.
- (3) Progressive elevation in lactic acid level.
- (4) And imaging results showing bilateral or multilobar infiltration, pleural effusion, or short-term increase in lesions [22]. Study revealed that ratio value of neutrophil to lymphocyte (NLR) is one of the determining factors which can be used for early detection of covid-19. In patients with Coronavirus disease 2019 (COVID-19), the most common clinical symptoms are fever and

cough, shortness of breath, and other breathing difficulties in addition to other nonspecific symptoms, including headache, dyspnea, fatigue, and muscle pain [23, 24]. Moreover, some patients also report digestive symptoms such as diarrhoea and vomiting [11, 25]. COVID-19 was similar to SARS and MERS in some clinical manifestations [26]. Fever occurred in 98-100% of patients with SARS or MERS, compared to 81.3% of patients with COVID-19 [27, 28, 29]. 18.7% of patients had no fever at admission, suggesting that the absence of fever could not rule out the possibility of COVID-19 [30].

The symptoms of COVID-19 remain very similar to those of the other respiratory epidemics in the past, which include SARS and MERS, but here the range of symptoms includes mild rhinitis to septic shock. Some intestinal disturbances were reported with the epidemics, but COVID-19 was devoid of such symptoms. When examined, unilateral or bilateral involvement compatible with viral pneumonia is observed in the patients, and bilateral multiple lobular and sub-segmental consolidation areas were observed in patients hospitalised in the intensive care unit. Comorbid patients showed a more severe clinical course than predicted from previous epidemics. Before SARS-CoV cases, it was thought that human CoVs leads to cold-like upper respiratory infection and self-limiting lower respiratory infection. The first death due to coronaviruses has reported by the isolation of SARS-CoV from a patient with pneumonia in China. As in other respiratory infected viruses and previous beta-CoV, similarities present in the clinical aspects of COVID-19 infections, it is known that clinical picture varies from simple respiratory infection findings to septic shock. Similar to SARS CoV and MERS CoV that caused epidemics in the past years, the first symptoms are commonly defined as fever, cough, shortness of breath.[19] Although diarrhea was present in about 20-25% of patients with MERS-CoV or SARS-CoV infection, intestinal symptoms were rarely reported in patients with COVID-19.

In another study of 99 patients, chest pain, confusion, and nausea-vomiting were noted in addition to previous findings.[23] On X-rays or thorax CT imaging of the examined patients, unilateral or bilateral involvement compatible with viral pneumonia was found, and bilateral multiple lobular and subsegmental consolidation areas were observed inpatients hospitalized in the intensive care unit. [24,25].

Study revealed that patient aged more than 50 years along with NLR equal to or more than 3.13 might have the tendency to develop covid-19 and the patient should be admitted internal care unit [31]. CT chest plays a major role in diagnosis of COVID-19. Chest CT has high diagnostic value in patients who have negative Reverse Transcription-Polymerase Chain Reaction (RT-PCR) results but whose clinical symptoms, auxiliary test results, and epidemiological history makes them highly suspected patients. [3,32].

Complications:

While Covid 19 pandemic sweeps across the globe, it is important to understand the transmission and the effect of the virus which has made it a pandemic. Covid 19 belongs to the coronavirus family, which also includes the SARS virus (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Symptoms) virus. The family of Coronavirus includes virus strains that cause the common cold and flu. So while a person infected with Covid 19 can be cured, it is important to understand that the factors that lead to fatality, include underlying illnesses (hypertension, diabetes, cardiac problems, respiratory issues) and individuals who are on immune-suppressing medications. In older individuals, the risk is higher, as the immunity decreases with age and they have a higher disposition for other illnesses.

Some people -- about 1 in 6 -- will have complications, including some that are life-threatening. Many of these complications may be caused by a condition known as cytokine release syndrome or a cytokine storm. This is when an infection triggers your immune system to flood your bloodstream with inflammatory proteins called cytokines. They can kill tissue and damage your organs, including your lungs, heart, and kidneys [33].

Individuals with the minor ailment may present signs of a respiratory tract viral contamination. Noticeable symptoms are dry cough, slight fever, nasal infection, sore throat, malaise, muscle pain and headache [11]. Individuals with the moderate disease are likely to present symptoms that are different from those of mild illness. Moderate disease symptoms include cough, breathing difficulty, and tachypnea [28].

COVID-19 complications may include the following: -

- Acute Respiratory Failure
- Pneumonia
- Acute Respiratory Distress Syndrome (ARDS)
- Acute Liver Injury
- Acute Cardiac Injury
- Secondary Infection
- Acute Kidney Injury
- Septic Shock
- Disseminated Intravascular Coagulation
- Blood Clots
- Multisystem Inflammatory Syndrome in Children
- Chronic Fatigue
- Rhabdomyolysis

Diagnosis:

The United States Centers for Disease Control and Prevention has developed criteria to use for a person under investigation. Ideally, if an individual is under investigation, immediate control and management measures are commenced [2]. Simultaneously, clinical factors are utilised to evaluate the necessity for testing.

This involves close interaction with a disease-confirmed client within fourteen days of symptoms. Also, it may include travel history to an infected region within fourteen days of symptoms beginning [3]. Precisely, WHO endorses gathering samples from individuals with COVID-19 [27]. Then, the samples are evaluated for viral RNA by means of the polymerase chain reaction. When the test outcome shows positive, it is suggested to repeat the test for the purpose of verification. On the other hand, if the test confirms negative, this warrant repeat testing. Also, chest X-ray and CT imaging are used to identify COVID-19 in suspect individuals with adverse molecular diagnosis.

A suspect case is defined as one with fever, sore throat, cough, and difficulty in breathing, who has a history of travel to China or other areas of persistent local transmission or contact with patients with similar travel history or those with confirmed COVID-19 infection. However, cases may be asymptomatic or even without fever. A confirmed case is a suspect case with a positive molecular test. Specific diagnosis is by specific molecular tests on respiratory samples (oropharyngeal swab/nasopharyngeal swab/sputum/endotracheal aspirates and bronchoalveolar lavage). Virus may also be detected in the stool and in severe cases, the blood. In a suspect case in India, the appropriate sample has to be sent to designated reference labs earmarked by the Government of India or the National Institute of Virology in Pune. The white cell count is usually low.

There may be lymphopenia; a lymphocyte count <1000 has been associated with severe disease. The platelet count is usually normal or mildly low. The C-reactive protein and erythrocyte sedimentation rate is generally elevated, but procalcitonin levels are usually normal. A high procalcitonin level may indicate a bacterial co-infection. The alanine aminotransferase/aspartate aminotransferase, prothrombin time, creatinine, D-dimer, creatine phosphokinase, and lactic acid dehydrogenase may be elevated, and high levels are associated with severe disease. The chest X-ray usually shows bilateral infiltrates, but may be normal in early disease. Computed tomography (CT) is more sensitive and specific. CT imaging generally shows infiltrates, ground glass opacities, and subsegmental consolidation.

It is also abnormal in asymptomatic patients/patients with no clinical evidence of lower respiratory tract involvement. In fact, abnormal CT scans have been used to diagnose COVID-19

in suspect cases with negative molecular diagnosis; many of these patients had positive molecular tests on repeat testing. [18-19].

Although the virus (SAR-Cov-2) nucleic acid reverse transcription-polymerase chain reaction (PCR) test has become the standard method for the diagnosis of SAR-CoV-2 infection, these real-time PCR test kits have many limitations including accessibility and availability issues. There are various serological tests based on immunoglobulin M (IgM)/IgG antibody detection, suitable for the qualitative detection of CoV (SARS-CoV-2/COVID-19). These include ELISA tests, rapid Chromatographic tests and others. IgM antibody generally begins to rise within 1 week of initial infection. IgG appears about 14 days after infection. Validation process is under way in China, Europe, and the USA. The results have been very promising with the advantages of rapid results, accuracy (high sensitivity [$\sim 89\%$] and specificity [$\sim 93\%$]), low cost, ease of use, easy accessibility, fast screening of COVID-19 infections, etc. [20]. The differential diagnosis includes all types of respiratory viral infections [influenza, parainfluenza, respiratory syncytial virus (RSV), adenovirus, human metapneumovirus, and nonCOVID-19 coronavirus], atypical organisms (mycoplasma, chlamydia) and bacterial infections. It is not possible to differentiate COVID-19 from these infections clinically or through routine lab tests.

Diagnosis of corona virus and acquiescence with any of the underlying could be diagnosed as critical COVID-19 patient [3, 27, 30].

1. Respiratory anguish: - in which the rate of respiration is equal or more than 30 breathes per minute.
2. Pulse oxymetry oxygen saturation at rest: - should be equal to or less than 93%.
3. Oxygenation index (P_{aO_2}/F_{iO_2}): - should be equal to or less than 300mm/Hg
4. If imaging test of lungs were done and shows significant progression i.e., more than 50% in lesion that too within 24 – 48 hours.
5. If patient had undergone respiratory failure and there is need for mechanical ventilation.

Treatment:

Treatment is essentially supportive and symptomatic. The first step is to ensure adequate isolation to prevent transmission to other contacts, patients and healthcare workers. Mild illness should be managed at home with counselling about danger signs. The usual principles are maintaining hydration and nutrition and controlling fever and cough. Routine use of antibiotics and antivirals such as oseltamivir should be avoided in confirmed cases. In hypoxic patients, provision of oxygen through nasal prongs, face mask, high flow nasal cannula (HFNC) or non-invasive ventilation is indicated.

Mechanical ventilation and even extra corporeal membrane oxygen support may be needed. Renal replacement therapy may be needed in some. Antibiotics and antifungals are required if co-infections are suspected or proven.

The role of corticosteroids is unproven; while current international consensus and WHO advocate against their use, Chinese guidelines do recommend short term therapy with low-to-moderate dose corticosteroids in COVID-19 ARDS [24, 25]. Detailed guidelines for critical care management for COVID-19 have been published by the WHO [26]. There is, as of now, no approved treatment for COVID-19. Antiviral drugs such as ribavirin, lopinavir/ritonavir have been used based on the experience with SARS and MERS. In a historical control study in patients with SARS, patients treated with lopinavir-ritonavir with ribavirin had better outcomes as compared to that given ribavirin alone [15].

In the case series of 99 hospitalized patients with COVID-19 infection from Wuhan, oxygen was given to 76%, noninvasive ventilation in 13%, mechanical ventilation in 4%, extracorporeal membrane oxygenation (ECMO) in 3%, continuous renal replacement therapy (CRRT) in 9%, antibiotics in 71%, antifungals in 15%, glucocorticoids in 19% and intravenous immunoglobulin therapy in 27% [15]. Antiviral therapy consisting of oseltamivir, ganciclovir and lopinavir/ritonavir was given to 75% of the patients. The duration of non-invasive ventilation was 4–22 d [median 9 d] and mechanical ventilation for 3–20 d [median 17 d]. In the case series of children discussed earlier, all children recovered with basic treatment and did not need intensive care [34].

Prevention:

Several properties of this virus make prevention difficult namely, non-specific features of the disease, the infectivity even before onset of symptoms in the incubation period, transmission from asymptomatic people, long incubation period, tropism for mucosal surfaces such as the conjunctiva, prolonged duration of the illness and transmission even after clinical recovery.

1. Isolation of confirmed or suspected cases with mild illness at home is recommended. The ventilation at home should be good with sunlight to allow for destruction of virus.
2. Patients should be asked to wear a simple surgical mask and practice cough hygiene. Caregivers should be asked to wear a surgical mask when in the same room as patient and use hand hygiene every 15–20 min.
3. COVID-19 transmits as a droplet pathogen and is placed in Category B of infectious agents (highly pathogenic H5N1 and SARS), by the China National Health Commission, infection control measures recommended are those for category a agents (cholera, plague).

4. Patients should be placed in separate rooms or cohorted together. Negative pressure rooms are not generally needed. The rooms and surfaces and equipment should undergo regular decontamination preferably with sodium hypochlorite.
5. Healthcare workers should be provided with fit tested N95 respirators and protective suits and goggles. Airborne transmission precautions should be taken during aerosol generating procedures such as intubation, suction and tracheostomies.
6. All contacts including healthcare workers should be monitored for development of symptoms of COVID-19. Patients can be discharged from isolation once they are afebrile for at least 3 d and have two consecutive negative molecular tests at 1 d sampling interval.
7. At the community level, people should be asked to avoid crowded areas and postpone non-essential travel to places with ongoing transmission. They should be asked to practice cough hygiene by coughing in sleeve/ tissue rather than hands and practice hand hygiene frequently every 15–20 min.
8. Patients with respiratory symptoms should be asked to use surgical masks. The use of mask by healthy people in public places has not shown to protect against respiratory viral infections and is currently not recommended by WHO.
9. The international response has been dramatic. Initially, there were massive travel restrictions to China and people returning from China/ evacuated from China are being evaluated for clinical symptoms, isolated and tested for COVID-19 for 2 week even if asymptomatic.
10. This recommendation is different from pandemic flu where patients were asked to resume work/school once afebrile for 24 h or by day 7 of illness. Negative molecular tests were not a prerequisite for discharge.

Conclusion:

The corona virus (COVID-19) had spreads at an alarming rate all over the world. Elderly and immunocompromised patients also are susceptible to the virus mortal impacts. As of now there are no approved treatments for this viral pandemic. While several medications have shown to be effective in clinical trials, further studies are needed to establish dosing, treatment course, and side effects of these medications. Since COVID-19 is a serious infection that has led to thousands of cases of several dreadful diseases like severe pneumonia, ARDS, and even deaths across the globe. For this there have been several lessons to glean from the global response to the SARS-COV-2 threat. Most of the responses have been reactive, with little preparedness investment in health systems and through community engagement and

empowerment. In recent years there are significantly advancement is done in the field of corona virology. However, the emphasis on data sharing, the rapid development and distribution of interim guidance documents by WHO and open-access pre-print sharing of rapidly emerging evidence reflect a paradigmatic shift in providing a data driven global-epidemic response. This unprecedented effort at providing information to global practitioners has led to a more concerted response, helping to mount international, multi-country and also migratory actions.

The SARS epidemic was a dramatic reminder that animal coronaviruses are potential threats to the human population, although the exact mechanism of species to species spread of the SARS coronavirus remains obscure. As, The COVID-19 outbreak has challenged almost all sectors due to the spread of the disease at an alarming rate across the globe. Notably, COVID-19 is an RNA virus that poses a threat to public health. Currently, the disease has caused thousands of infections and deaths. Ideally, the rapid spread of the ailment calls for strong investigation and isolation protocols to avert additional spread. Fundamentally, no confirmed medicine or vaccine has been created to improve the health of patients with the condition.

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CHALLENGES TO THE ACADEMIC DOMAIN IN THE AFTERMATH OF COVID-19

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Abstract:

This is a crucial time for the education sector. As there is no immediate solution to stop the outbreak of the pandemic COVID-19. A survey was done on the education system adopted by various institutions to meet the present situation. A total of 5 schools and 5 colleges were randomly selected both from the rural as well as urban areas. Data collection was done on the number of students benefitted by online teaching and the students which cannot be reached through online mode of teaching. As there is lockdown the present study was also done from home using online mode of survey using questionnaire. From the above study it was found that 80% of selected schools are adopting online mode of teaching whereas 100% of the selected colleges are adopting it. 50% of school children are benefitted while 75.33% of college students are benefitted by online teaching. The rest cannot be reached due to various problems like basic online access difficulty due to poor connectivity, parents cannot afford recharges or smart phone or laptops etc. So, this type of study will help to find out measures to solve the problems.

Keywords: Challenges, Education, Students, Pandemic.

Introduction:

Due to the spread of COVID-19 around the globe every country is facing serious problems as the schools, colleges, universities are closed. Every country is adopting measures to minimize the effect of the lockdown due to the outbreak of the pandemic COVID-19. Different countries are adopting various measures like creation of website, with all the information need to fight against COVID-19. Countries like France, Croatia develop partnerships with other organisations to develop website containing information on higher Education system. In India also online Education is adopted as the schools, colleges and universities are closed. But in countries like India, the major problem is that all the areas are not well connected with internet and the majority of males are using smartphones than females. The percentage of school

children having smartphones is very small. The teachers are also not very much familiar with the online mode of teaching.

Methods:

A survey was done on the education system adopted by various institutions to meet the present situation. A total of 5 schools and 5 colleges were randomly selected both from the rural as well as urban areas. Total number of students selected was about 300 school children and 150 college students. Questionnaire was released through online mode and the responses were recorded. Few questions were designed for the teachers and few for the students. Both the sets were recorded separately. Data was collected on the numbers of schools and colleges adopting online mode of education and the numbers which are not adopting any measures. Data collection was done on the numbers of students benefitted by online teaching and the students which cannot be reached through online tools. So as there is lockdown the study was also done from home using online mode of survey.

Results and Discussion:

- Number of schools adopting online mode of teaching- 4 out of 5 (80%)
- Number of colleges adopting online mode of teaching- 5 out of 5 (100%).
- Number of school children benefitted by online teaching- 150 out of 300 (50%).
- Number of college children benefitted by online teaching- 113 out of 150 (75.33%).

Problems faced by school students due to lockdown:

1. Basic internet access to children is the biggest hurdle.
2. Parents below poverty line can't afford recharges.
3. In some family, they may not even own a smart phone.
4. In many parts of the world, school feeding programs provide children with their most nutritious meal of the day, so school children are deficient of nutritious meal.
5. Engaging the children in online studies, particularly young school students are not so easy.

Problems faced by college students due to lockdown:

1. In the absence of grades and marks, students are unable to differentiate themselves.
2. Education disruption has its impact on our economy and lifestyle.

3. Online learning affects examinations also; it is not very easy to find a substitute of the offline examination in online mode of teaching and learning.

Problems faced by the teachers:

1. First, the technological issue. Though 90 Percent of the respondents have a mobile phone, about 53 Percent of them could only access online classes infrequently or not at all.
2. Social and pedagogical issues.

Benefits of the lockdown due to COVID-19:

1. **Digital Transformation of Education System:** Many schools, colleges and universities believe that it is the ideal time to change the classical chalk and board method to online mode. As it is necessary and there is no any other way, educational institutions are compelled to switch to the online mode and able to take the advantage of technology.
2. **Government Intervention:** Government has taken many schemes to help the students in this situation of pandemic. E-learning portals and apps have been developed like Diksha portal, e-patshala, Swayam(it was launched year back but people come to know more about it now) etc.

Schools are more than learning centres for poor children. They provide social protection, nutrition, health and emotional support, and this applies in all countries, from low- to high-income. About 9.12 crore Indian children are not receiving their mid-day meal during school closure. A great opportunity will open up for those companies that have been developing LMS (learning management systems) for universities and colleges. During lockdown a large number of academic meetings, seminars and conferences are hosting online, there is one advantage that it reduces both labour and time. So, this is a crucial time for the education sector as there is no immediate solution to stop the outbreak of the pandemic COVID-19.

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WORK FROM HOME DURING COVID-19 IN EDUCATION SECTOR: WITH REFERENCE TO PRIVATE UNIVERSITIES IN PUNJAB

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Abstract:

Aim/objectives: The aim of the study is to determine the readiness of the universities for work from home module during Covid-19 pandemic period. Also, the study investigates the experience of the employees while working from home during this pandemic period.

Methodology: The study was conducted among the employees working in 2 private universities in Punjab. Total 170 employees were contacted by e-mail. However only 102 responded and filled the questionnaire. The questionnaire was generated through survey generating application. Total response is 60%

Results: The results of the study revealed that majority of the employees (91%) believed that the universities were providing them the required support to work from home efficiently. Also 72 % of the employees were willing to recommend work from home system after the pandemic period ends.

Limitations/gap: The study was limited to private universities in Punjab. Future studies can be conducted in both public and private universities/different sector like insurance and I.T /different region. Also, the sample size of the study was limited so future studies can be done taking larger sample size for better generalization of results.

Practical implications: The results of the study can help the organizations to improve their preparedness for any future crisis so that its performance is not affected.

Keywords: Work from Home, Covid-19, Universities

Introduction:

Coronavirus /Covid-19 outbreak has resulted in major disruption in economy across the globe. This pandemic has forced companies including MNC's to implement work from home model. Workers and employees million in number have been instructed to self-quarantine and fulfil their job responsibilities from home itself. Education sector e.g.: schools, colleges and

universities have been closed across the country and the globe as a measure to prevent the spread of coronavirus /Covid-19 sending students, teaching and non-teaching staff home.

Universities, schools and colleges are trying to do their best and making efforts to impart best quality education to the students at home through online teaching module. This is to ensure that their studies are not affected, and their timely assessment is done by giving and submitting their assignments and tests through online module only.

This pandemic has strongly transformed the years old teaching model and replaced it with online teaching system based on innovation. This transformation is possible only if the service givers e.g.: faculties are trained properly so that they learn how to deliver quality education through such system and there is no gap in teaching learning process.

Teachers are sharing the learning content like notes, assignments and in some incidents conducting the tests and exams through e-learning module. However, such arrangement and module are possible only in those institutions which have the resources, in other organizations including schools who don't have the resources and the required funds are not able to do the required due to which poor students are suffering.

In educational institutions, where faculty members and other staff members are required to work from home, they must fulfil their moral obligations. And while fulfilling these obligations, the employees may face many problems and dissatisfaction. Some form of dissatisfaction can be in the form of work life imbalance. The staff may find it difficult to fulfil their professional duties and side by side their duties at home. So, it becomes very important for organizations especially educational institutions to determine the effectiveness of the work from home system for the betterment of the future and improve the system.

Although it is difficult to estimate the exact losses companies must bear as a result of this pandemic, still is very evident that organizations across the globe are suffering huge financial losses and another setback. One of the problems of working from home is management of own Schedule and Time. People may get the impression that while working from home, employees can set their own time to work and change accordingly but it doesn't work that way. When employees are required to set their own working hours, they may realize that they must seek after different interests or invest energy with your family. They must plan days, weeks, or months ahead of time while working from home.

Without proper structure and balance, employees may be put in a difficult situation. They must complete their household chores and along with that attend meetings online, complete their work assignments also. So, for successful implementation of work from home system, time management is very important and crucial. And to do that, they can set their workhours and stick to them. It also implies keeping up normal business hours or putting together your work hours with respect to the timetable kept up by their spouse or children. For long term, this will prove progressively profitable; it permits employees to invest energy with the individuals they care about.

Work from home can also lead to obscured line between personal and professional life. On the opposite side of the coin, when employees work from home, they no longer have a reasonable geographic division among workspace and individual space. To avoid this problem, the most effective method to avoid blurred work-life doom is to have a physical space for working, separate from the remainder of their home so that the employees can peacefully work without any distractions due to home activities. To work efficiently, employees must ensure that there is no disruption from family members except if the work is finished [Golden *et al.*, 2008]. At last, the clearer the limits are drawn, both in reality -between your work life and individual life, the better the employees can perform the work.

While working from home, the employees also face interruptions. Regardless of whether they choose a set calendar and have a committed space to work, they still can face numerous disruptions hampering their work. Due to the interruptions, it's difficult to focus on work. Even if the employees want to complete their work, interruptions like personal calls, TV, books, they discover a reason to break early. The family members, companion or kids likewise happen to be home, they may not spare a moment to intrude.

To eliminate those interruptions and keep a firm boundary between work life and home life, the most effective method to avoid distraction is to genuinely seclude into a different home office and making all the efforts to prevent interruptions in their work territory. Setting standards with the family members will not let the any interruptions while working. Work from home is characterized by decreased supervision and direction [Cooper and Kurland, 2002]. They may not mention to the employees what the employees must do, however they may give you input about their advancement.

At the point when employees are working from home, the employees in general will get less supervision and directions from their boss [Lapierre *et al.*, 2015]. The boss may not be able

to give the employees as much direction. In order to prevent such problems employees must at any rate once every week, interface with their boss to talk about their advancement, and difficulties, and any plans to address those difficulties keeping them in contact frequently. The employees may get better criticism and bearing. Employees can also define wide week by week objectives. Correspondence and Coordination challenges may also be faced by the employees while working from home. It's hard enough to hold profitable in-person gatherings to facilitate diverse colleagues' endeavors to stay connected through online module. At the point when everybody tries to remain connected online, it turns into harder to remain in the same spot.

People depend on nonverbal correspondence when they talk. Messages, calls, and even video calls expel a significant part of the system to remain connected. This issue is so inalienable in virtual organizations that a whole industry has jumped up to unravel it. Group coordinated effort instruments exist explicitly to make it simpler for organizations to keep in contact and remain sorted out. Various online applications are another well-known decision for organizations to keep in contact utilizing. The employees may also get a sense of social isolation due to lack of communication with the other employees [Ammons and Markham, 2004; Cooper and Kurland, 2002; Bailey and Kurland, 2002].

The above points don't mean work from home only has disadvantages. Work from home has several advantages. The work from home module will assist the employees with having their own timetable and taking a break from normal work will assist them with expanding the profitability [Gurstein, 2001; Morgan, 2004]. The workers can move effectively around their home without being under the continuous watch of the superiors and others in the organization. This is possible in case of only work from home system where they have a schedule and their own flexible timetable of workspace. Being all alone is the benefit of work from home module. Because you don't have any other employee around to support you, it will cause the individual to be more expert dynamic and free in taking a shot at their own. The employees can also save expenses related to travel and transportation [Tremblay and Genin, 2007].

Truly, you may have innovative viewpoints to help, yet at the same time the individual will have the opportunity to work alone and develop creative ideas and do better planning [Demerouti *et al.*, 2001]. This will assist the employees with expanding their capacity and improve your range of abilities as you take a shot at their own. Innovation upgrades have never

let an individual out of contact. These days, all business has part of choices like messages, calls, video chats etc. This will consistently assist the worker with getting quickly in contact to explain any sort of dire issues where nearness is required. Being distant from everyone else in the home will certainly improve the attention on work. Now and then there may be interruptions, yet as the responsibility increases due to the non-accessibility in the workplace work area, an employee will in general be increasingly cautious and centered to the work activity.

Numerous things can be maintained a strategic distance from office interruptions like tattle talks, visit breaks, pointless gatherings and so on. There is no office on the planet where "workplace issues" don't exist. Nonetheless, when you are working from home, there is just a single individual with whom you need to contact regularly; there are no irritating colleagues around. There is no psychological pressure, and the employees can easily talk and do communication without being under the watch of his/ her colleagues. Rather than battling to get the best desk area in the workplace, employees entire office is as of now the best.

When the employees work from home, there are no transportation costs and costly uniforms are required for the workplace [Garg and Rijst, 2015]. Additionally, setting up an office at home doesn't cost a lot. The employees can easily convert any room into office by setting their laptop, files and Wi-Fi setup and start working instantly. Although work pressure exists in any sort of work, it's usually less in case of work from home. Employees don't need to rush every morning and face traffic chaos and reach office to face daily work pressures. Employees don't need to confront their irritating colleagues every day. They can easily focus on work without any unnecessary interruptions.

Objectives of the study:

1. To study the effectiveness of the work from home module in private universities in Punjab.
2. To study the satisfaction of the employees towards work from home module.
3. To determine the readiness of the private universities to implement work from home module.

Methodology:

Population and Sample:

Under this study, a survey was conducted among faculty members working in two private universities in Punjab. The faculty members of different departments of the universities

were taken as population for the undertaken study. The various departments were MBA, Commerce, BBA, Engineering and Pharmacy department.

Data and Sources of Data:

The respondents participated in this survey by clicking the link of the questionnaire developed using survey administration application. The link was shared via e-mail. Instructions and purpose of the study were communicated to each respondent via the e-mail. Respondents were assured about the confidentiality of their information. Primary data was collected with the help of Structured close ended questionnaires. 170 faculties were contacted but only 102 responded. The total number of responses received was 102 which count as 60 % size of the sample.

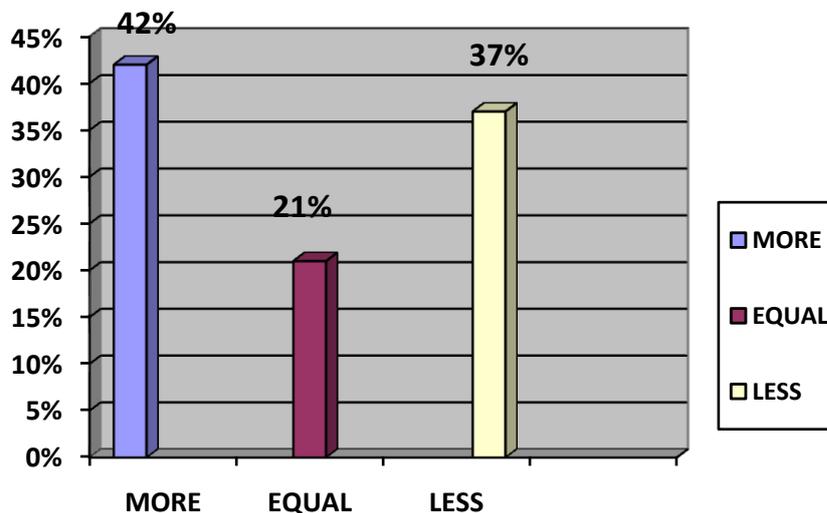
Sampling technique:

The sampling technique used to select the sample for the study was convenience sampling technique.

Data analysis and findings:

The results of the study are as follows:

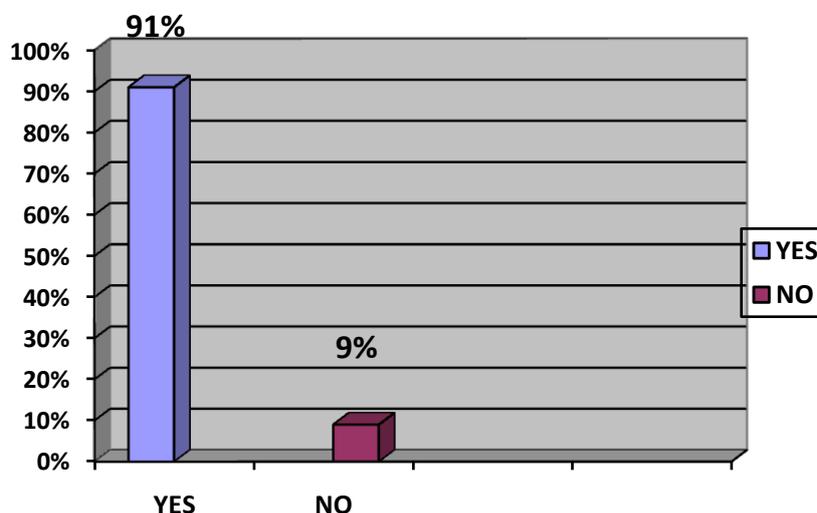
1) Do you work more time or less time while working from home during Covid- 19 pandemic period?



Considerable proportion of the faculty members (42 %) believe that they spend more time/hours while working from home during this Covid-19 pandemic period. 21 percent of the faculty members reported that they work for same hours working and completing their work

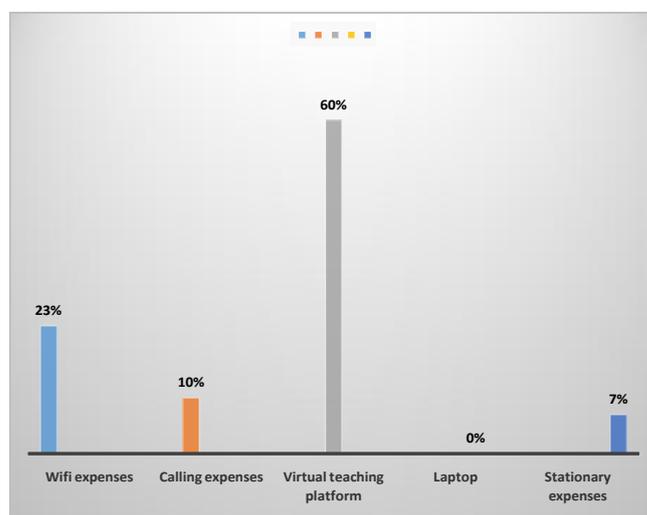
assignments. 37 percent of the faculty members feels that they are spending less time completing their work assignments.

2) Does your university provide you required support to work from home during Covid-19 pandemic period?



Only 9% of the faculty members revealed that the university is not giving them the required support to complete their work assignments on time.

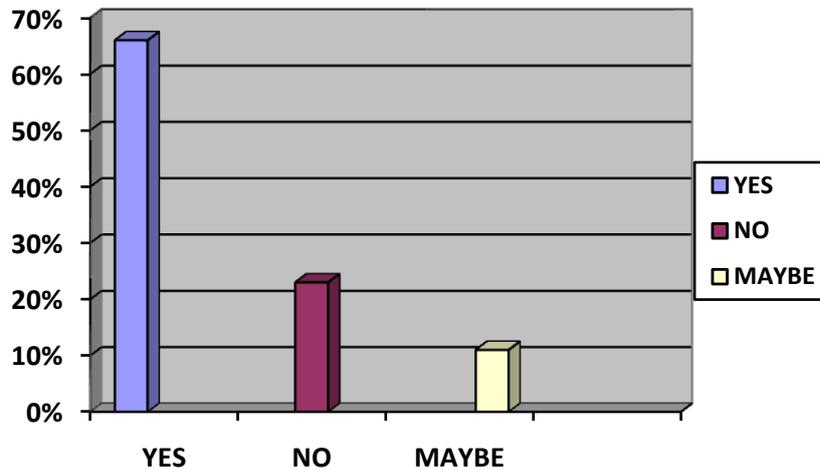
3) Mention the types of support your organization provides you to perform the job responsibilities to work from home during this pandemic period.



Considerable percentage (60%) of the staff reported that their organization is providing them virtual teaching platform in order to complete their work assignments. 23 percent of the faculty members reported that to complete their work assignments the organization is

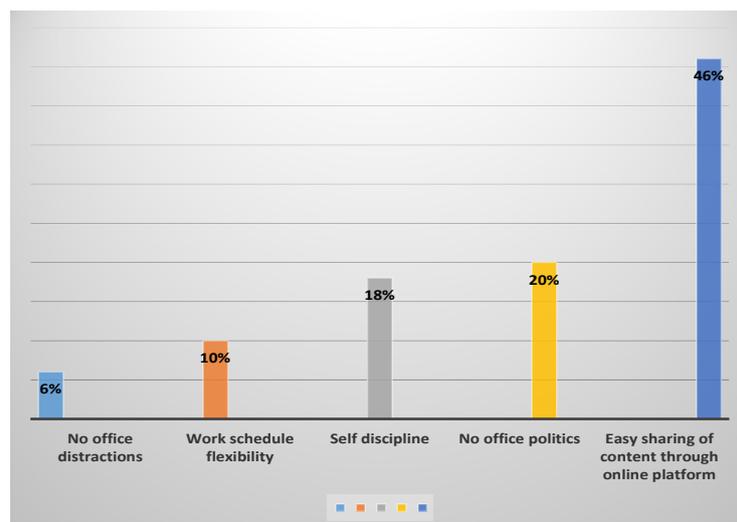
providing the Wi-Fi expenses. 10 percent of the employees/staff reported that they are given calling expenses to perform their duties.

4) Do you believe work from home is effective during this Covid-19 pandemic period?



66 percent of the faculty members agree that work from home is effective to complete work assignments. 23 percent of the faculty members disagree that work from home is effective to complete work assignments. Only 11 percent are unsure whether work from home is effective or not.

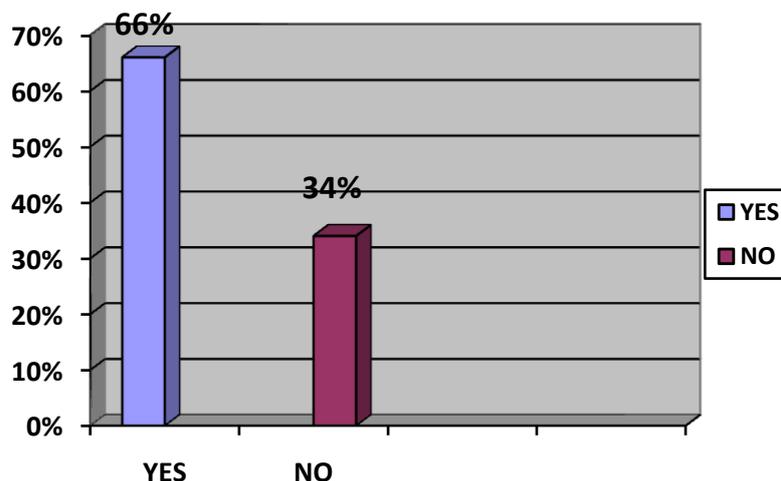
5) According to you, which is/are the advantage of work from home during the Covid-19 pandemic period?



Considerable percentage (46 percent of the faculty members) believes that they can easily share the learning content through online sharing platform. 20 percent of the faculty members feel that there is no office politics when they work from home. Only 18 percent feel

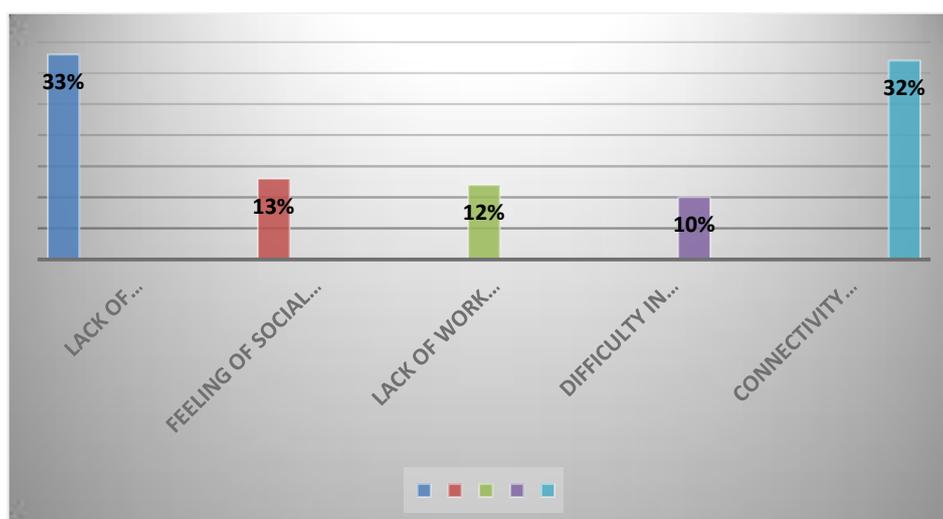
that they feel more self-discipline. 10 percent of the staff feels that work schedule flexibility is the advantage of work from home module. Only 6 percent feels that no office distractions are the advantage of work from home module.

6) Are you able to maintain work life balance while working from home during Covid-19 pandemic period?



High proportion of the faculty member (66%) agree that they can maintain balance between work life and personal life while working from home during this covid-19 pandemic period. 34 percent of the faculty members feel that they can't maintain balance between their personal life and work life.

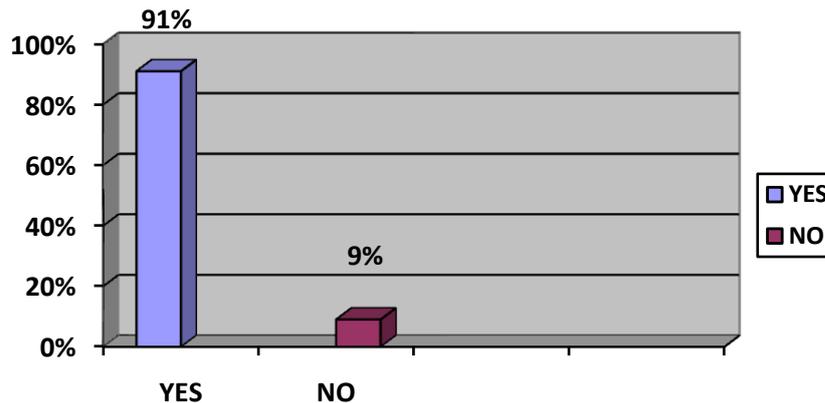
7) According to you what is /are the issues faced while working from home during Covid-19 pandemic period.



33 percent of the faculty members believe that they feel lack of concentration due to interruptions at home. 32 percent of the faculty members reported connectivity or connection

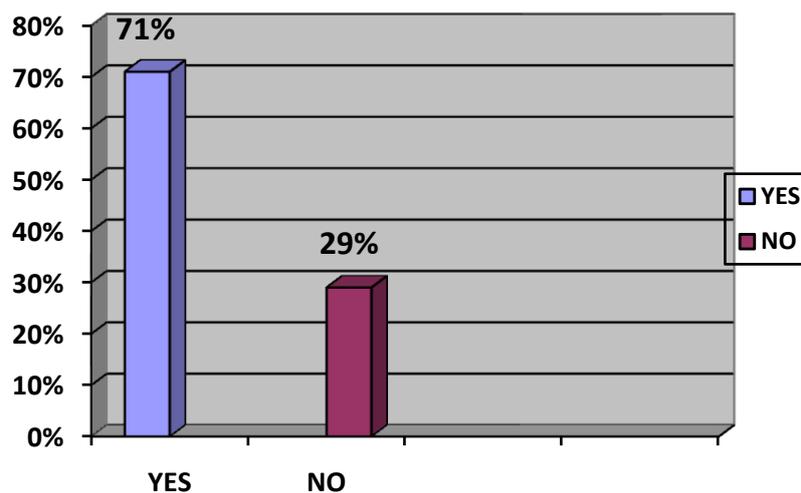
issues. Only 13 percent feel loneliness due to lack of social contact with other employees. 12 percent of the staff feels lack of motivation is the disadvantage of work from home module. Only 10 percent feels that they found it difficult to switch off or unplug from work while working from home.

8) Did you receive clear guidelines or instructions from the management before starting work from home during Covid-19 pandemic period?



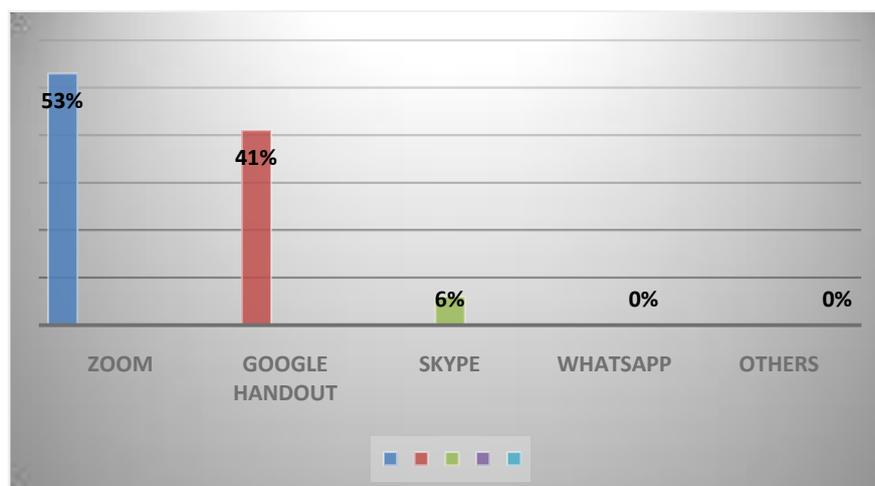
Majority of the faculty members (91 %) agree that they were given clear instructions and guidelines before they started working from home during Covid-19 pandemic period.

9) Do you receive clear instructions and guidance on regular basis from your superior/head of the department while working from home during this pandemic period?



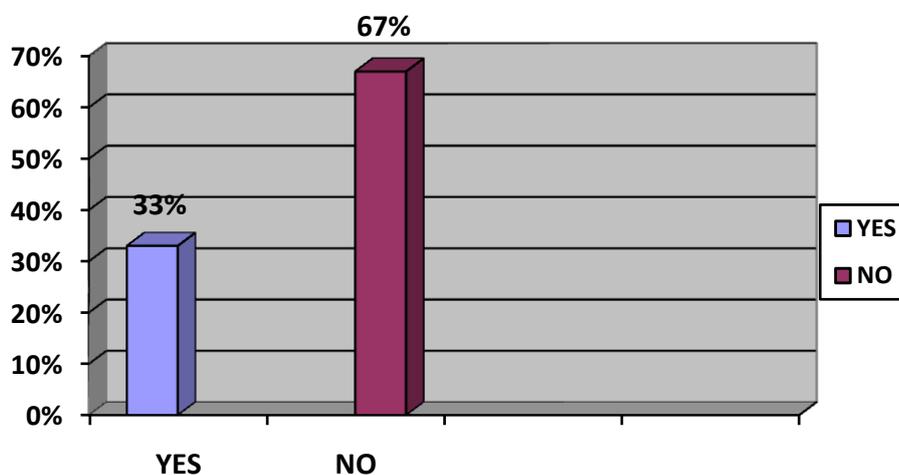
High proportion (71 %) of the faculty members reported that they got instructions and guidelines from their superiors on regular basis to do their work efficiently.

10) Which online platform do you use for communication/ /teaching/attends meetings?



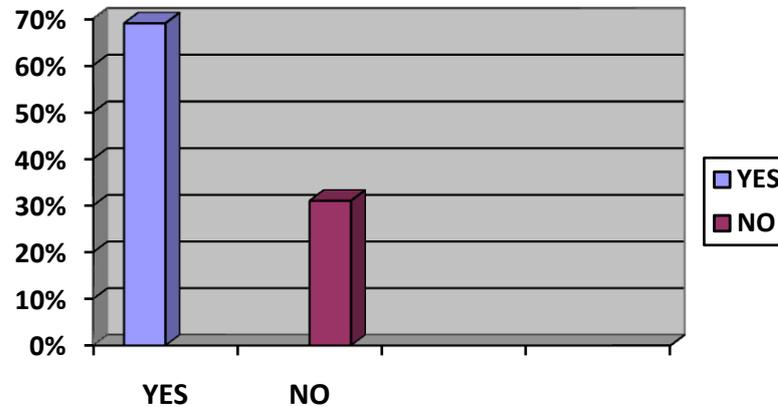
More than half (53 percent) of the faculty members use Zoom platform to attend meetings/conduct classes or communicate with their superiors while working from home during this Covid-19 pandemic period. 41 percent of the members use Google hangout and only 6 % of them use Skype for communication. None of the faculty members use WhatsApp as a platform for communication.

11) Do you believe decision making or communication is slow while working from home during pandemic period?



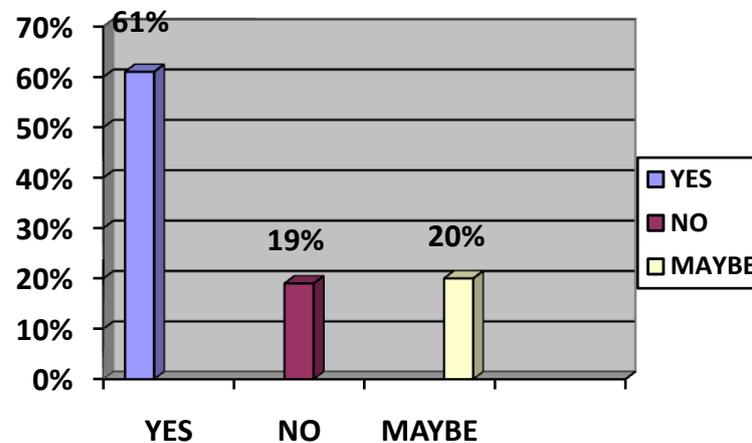
Approximate 33 percent of the staff believe that the communication or decision making is slow while working from home as compared to work on site. Considerable percent (67%) believe that the decision making or communication is adequate while working from home.

12) Do you think, more documentation and record keeping are required while working from home during Covid-19 pandemic period?



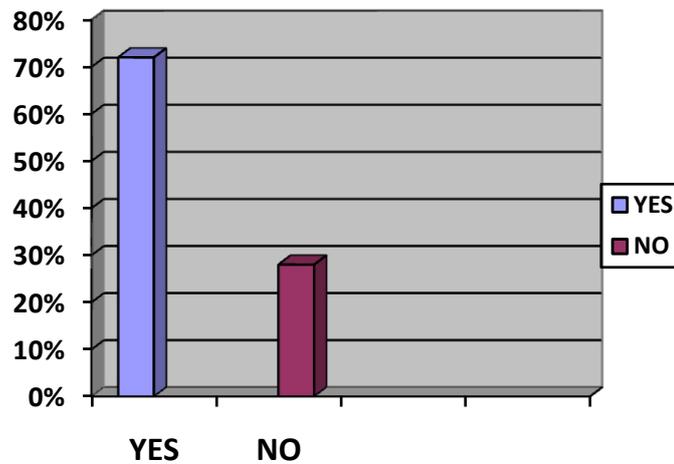
High percentage of the faculty members (69 %) believe that they need to keep more documentation and records while working from home during this pandemic period. 31 % of the members don't agree.

13) Once the Covid-19 pandemic period ends, would you like to work from home for longer period or for some time



More than half (61 % percent) of the employees are willing to work from home after this pandemic period ends. 20 percent are willing to work on occasional basis .19 percent of the employees don't want to work from home after this pandemic period ends.

14) Based on your experience, will you recommend work from home module to others.



Majority of the employees (72 %) are willing to recommend work from home to others based on their experience during this pandemic period. 28 % of the employees don't agree to recommend work from home module to others.

Conclusion:

The study revealed belief /confidence of significant proportion of employees in work from home module or system and believed that the organization was prepared to provide them necessary support required to fulfil their work responsibilities while working from home. Also, majority of the employees were willing to recommend work from home module or system to others.

Practical Implications:

The results of the study can be used to eliminate the weaknesses of the organization, so that work from home can be implemented in a better way and the organization is prepared beforehand any pandemic situation or a crisis period.

Limitations and future research:

The study was limited to only private universities in Punjab region. Futures studies can be focused on both public and private universities /Different region/Different sector like I.T and Insurance sector. Also, for future studies, larger sample size can be taken so that the results can be generalized.

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IMPACT OF COVID-19 PANDEMIC LOCKDOWN ON DIETARY HABIT AND LIFESTYLE OF RURAL PEOPLES: A CASE STUDY

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Abstract:

Pandemic situation due to infectious diseases is well-known for mankind since ancient time's i.e from plague, cholera, small pox, Spanish flu, SARS, MERS flu, Swine flu etc. Same scenario is repeated in late 2019 due to respiratory infectious Corona virus and it devastated social, economic, cultural aspects across the whole world. Owing to its pandemic nature many of the countries adopted lockdown as a primary preventive measure. However during this lockdown condition, many people adopted altered habit and lifestyle. The present study focused on effect of lockdown on dietary habit and lifestyle of human beings. In-silico survey based approach is used for collecting the data and analyzed manually using statistical means. The results revealed that, as compared to students and old age group, working people shown drastic change in their dietary habits and lifestyle.

Keywords: Pandemic, Corona virus, Lockdown, Dietary habits, COVID-19

Introduction:

COVID-19, is a severe acute respiratory syndrome caused by novel strain of SARS Coronavirus-2 (SARS-CoV-2). It is supposed to be zoonotic disease and emerged from Wuhan seafood market (Hubei province of China) and extensively spread to rest of the globe (Wang, *et al.*, 2020). Owing to increasing number of infections across the globe, on 30th January 2020, the emergency committee of WHO declared this disease as global health emergency (Velavan, *et al.*, 2020). However in India the first case of confirmed COVID-19 was reported on 13th January 2020 in Kerala state and further radically spread to different states. In order to avoid further spread across the country, the prime minister of India announced the 14 hours public curfew on 22nd March 2020. Furthermore, to combat against infections and strengthen the medical or

health facilities, on 24th March 2020 prime minister of India declared a first lockdown of 21 days for all states of country (<https://www.mha.gov.in/>).

During the sudden lockdown in India, with few exceptions (essential medical facilities) all public gathering places such as school, multiplexes, restaurants, shopping complexes, higher educational institutions, transportation facilities including trains, buses and domestic and international flights were closed. In addition, to avoid the crowds and spread of COVID-19, students and employees were asked to continue classes and work from home respectively. Though India adopted lockdown of 21 days, but still the rate of infection was not under control; so the lockdown was further continuously extended for near about six month to avoid mass spread and save lives. Due to continuous lockdown extension by government, there is sudden and radical change has occurred in the habits, forms of socialization and lifestyle of the peoples. Moreover physical distancing and self isolation strongly impacted to human lives, as it affects the particular eating or dietary habits and everyday activities. As we had experienced how COVID-19 impacted our interactions with food in variety of ways such as unavailability of some food products, social context of food purchase, reduced choices for food, etc.

Habit in psychological context is defined as, repeated cue response of human beings occurred subconsciously in stable circumstances. There are various types of habits that human encounters are biting to nails, smoking, alcoholism, consumption of drugs, consumption of selected food, etc. As far as food consumption is concerns, human beings often respond subconsciously to specific types of food for their well-beings and likeliness, irrespective of their nutritious content, quantity of food, timing of food consumption etc. Hence, due to this, a specific dietary habit is developed among such individuals, and that habit is very difficult to change under normal and stable condition or routine lifestyle. However, those habits are drastically changed during abnormal or lockdown situation due to COVID-19 pandemic.

A healthy persons diet is totally rely on physical activities and availability of food variety. But due to staying at home, stockpiling of food and less physical activities drastically affected the dietary habits of human beings with reduced food intake and repeated use of particular type of food. The limited access to daily groceries may lead to reduce the consumption of fresh foods, especially fruit, vegetables and meat or fish, while the consumption of highly processed food having higher percentage of fat, sugars and salt is increased, which further leading to change in emotional response to food or impacted

negatively on human psychology (Muscogiuri, *et al.*, 2020; Wang, *et al.*, 2020) also called as stress eating of emotional eating (Van, 2018; Evers, *et al.*, 2018).

However many people prefers or unwillingly use food rich in carbohydrates to reduce stress and positive effect on mood this is called as food carving. As the carbohydrate rich food encourages serotonin production, which helps in above said conditions (Moynihan, *et al.*, 2015; Yilmaz and Gokmen, 2020; Rodriguez and Meule, 2015; Ma, *et al.*, 2017). Moreover food carving is proportional to glycemic index of food, which increases the risk of obesity, hypertension, cardiovascular diseases, diabetes, and chronic state of inflammation development (Wu, *et al.*, 2020; Muscogiuri, *et al.*, 2020). In fact, peoples with severe obesity are one of the groups with the higher risk for COVID-19 complications. Obesity is an expansion of the adipose tissue, which produces cytokines and contributes to a pro-inflammatory situation. Moreover, with reference to pulmonary physiology, peoples with obesity have decreased expiratory reserve volume, functional capacity and respiratory system (Havermans, *et al.*, 2015).

Eating habits and lifestyle modification may threaten our health. Therefore maintaining a correct nutrition status is crucial for healthy individual, especially in a period when the immune system need to fight back. Moreover knowing the nutritional status (before and after pandemic) helps in supporting the health status of population. Hence, the present investigation aims to study the impact of COVID-19 on dietary habits and lifestyle of people before and after pandemic. However numerous researcher performed similar type of study at national level, but owing to India is developing country and comprises of rural and urban sector, so we had studied the pandemic impact on rural population; as the dietary habits and lifestyle of rural and urban peoples are quite different.

Aim of Investigation:

The main aim of the study is to explore and analyses the changes in eating behavior and lifestyle of human beings during before and after lockdown among rural sectors in Solapur district of Maharashtra state (India).

Methodology:

The execution of study was carried out by using in-silico (through Google form) based shot survey for data collection, from some peoples of different age groups in Solapur district of

Maharashtra state (India). However, web based survey is very effective method of data collection, because it facilitated the wide dissemination of the survey questionnaire during a period where, there are many territorial restrictions due to the pandemic. In total 120 peoples (from diverse rural sectors of Solapur) representative of different age groups responded to this survey.

Survey questionnaire:

The questionnaire was specifically built with core objectives of investigation and comprises 27 questions which are divided into four different sections as (1) Personal data (age, gender, hometown, current employment—especially if they had the possibility to work from home) (2) anthropometrics information (reported weight and height) (3) dietary habits information: (daily consumption of certain foods, sauces, number of meals/day) (4) lifestyle habits information (hours of sleep). In addition specific questions about physical activity habits were asked. Moreover the sample population was divided in three categories based on age as 1) 18-30yr, 2) 30-50yr and 3) 50-60yr.

Furthermore all participants were fully informed and ensured about the aim of study, data sharing and privacy policy before participation. After Participants completed the questionnaire, the final database was downloaded in Excel sheet.

Data Analysis and Discussion:

A) Personal data and anthropometrics

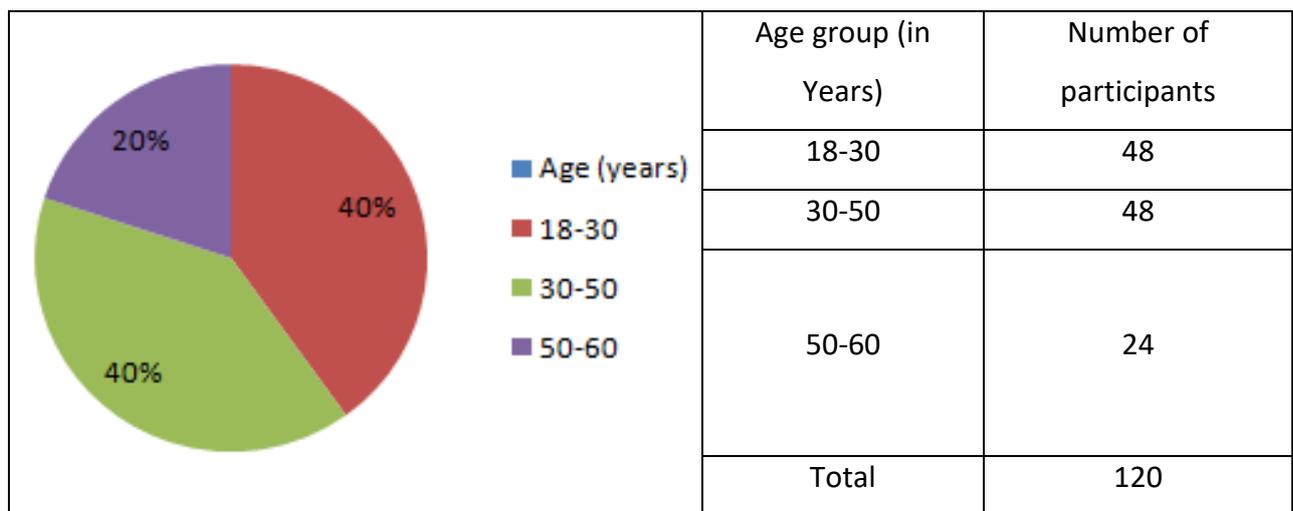


Figure 1: Distribution of participants based on their age group

In total 120 participants submitted the response in terms of filled questionnaire from all over (Rural Sector) the Solapur District. After the thorough analysis, results showed that, 40% participants are from 18-30 years, 40% from 30-50 years and 20% from 50-60 years age group; however among all the participants 40% are female (figure 1). Moreover, 60 % of population belongs to employed which are working from home or visiting to workplaces as frontline workers, while students and farmer's contribution is 20% each.

As far as anthropologic data analysis is concern, the average height and weight among all age group is 166 cm and 66 kg respectively. Among all age groups 60% of participants feels weight gain during lockdown period.

B) Dietary habits changed during lockdown

1. Availability of Food items:

The diet comprises of all essential sources of carbohydrates, proteins, fats, vitamins, etc. and is important for performing all physical activities and to maintain healthy condition. But due to lockdown, regular diet of many people is get affected which leads to immune-compromised condition. Figure 2 implicates that, except tea, the availability of food items such as fruits, Vegetables, Fish, Meat, Cheese and chips was seems to be affected; as there is considerable difference in percentage of availability in before and after lockdown. The reduction in availability of listed food items during lockdown was may be due to many factors such as, fear, unavailability of food, closing of shops and malls, and restrictions imposed by government etc.

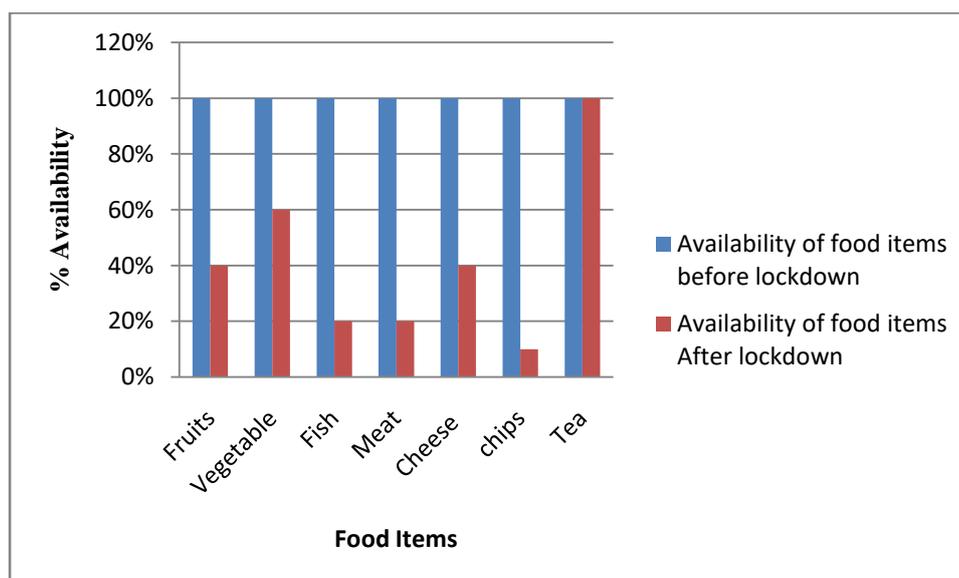
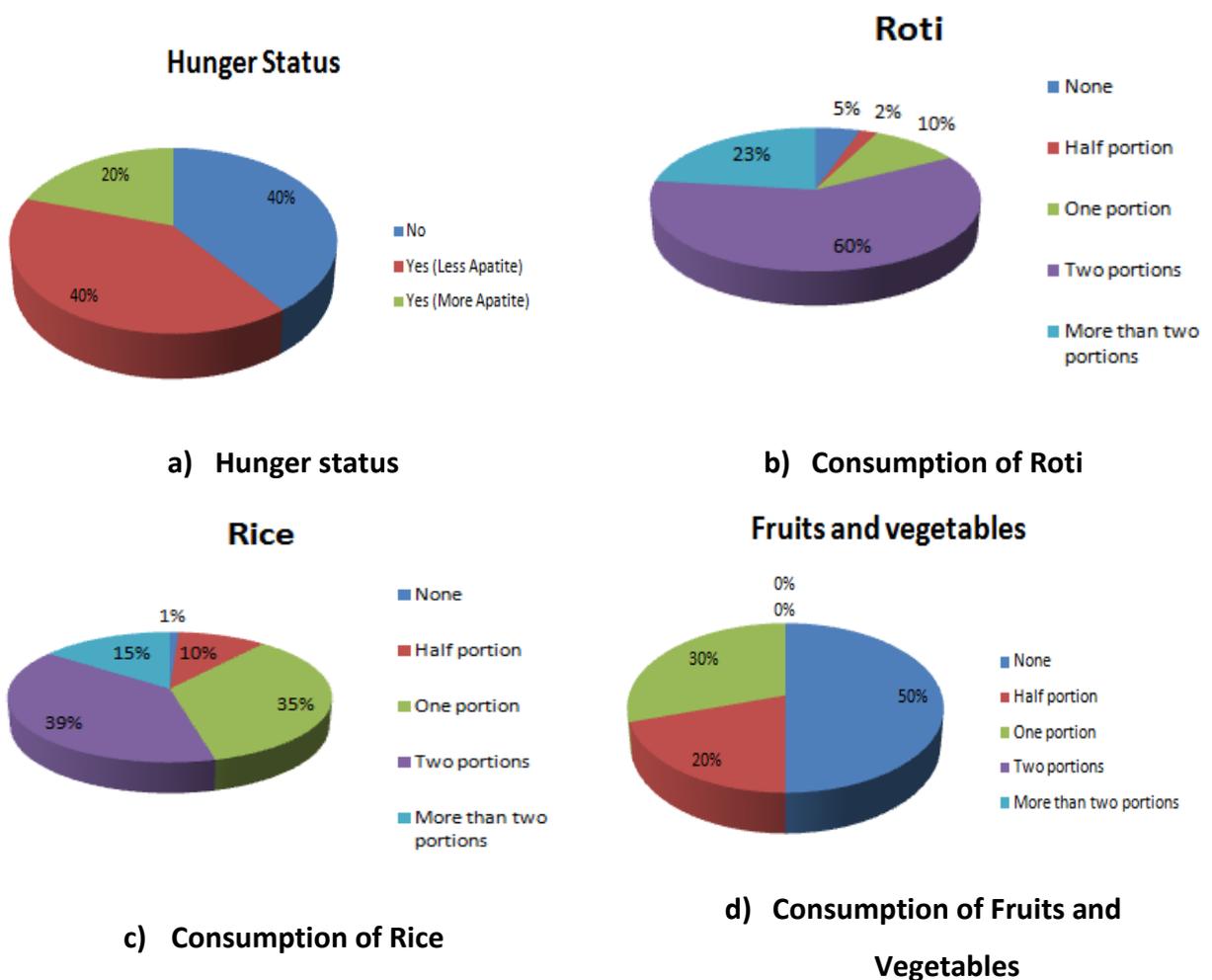
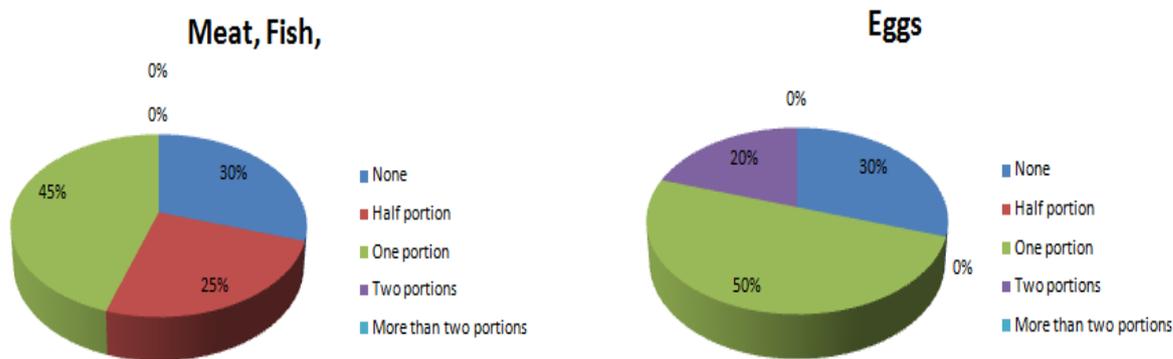


Figure 2: Availability of food items before and after lockdown

2. Hunger status and Consumption of Food items:

The effect of lockdown on hunger status and consumption of food items such as Roti, Rice, Fruits and vegetables, meat / fish and eggs of people (sample population) (figure 3) was studied; as these food items are the primary consumable items in the studied area. The results revealed that, **a) Hunger status:** in total 40% of studied population from all age groups, feels no hungriness, while 40 % and 20% people’s fells hungriness with less apatite and hungriness with more apatite respectively. **b) Consumption of Roti:** The sample population used in present study is distributed in to adult age groups (Min. 18 years to Max. 60 years), which are supposed to eat more, but we received very contradictory results as, 60% peoples prefer to eat only two portions of roti while 23% people likes to eat more than two portions of roti per meal. In addition, only 17% of studied population who prefers to eat one or less than one portion per meal.





e) Consumption of Meat / Fish

f) Consumption of Eggs

Figure 3: Change in Hunger status (a) and consumption of food items (b) Roti (c) Rice (d) Fruits and Vegetables (e) Meat / Fish (f) Eggs during or after lockdown

c) Rice: Rice is main component of daily meal and it is present in almost every dish. Results showed that, only 39% of studied population ate two portions, while 35 % people consume one portion of rice per meal. Moreover, 11% of population reduced or skipped rice consumption.

d) Fruits and Vegetables: Among studied population 50% respondents skips fruit and vegetable consumption while remaining 50% population ate one or less than one portion of fruit and vegetables.

e) Meat / Fish: Out of 120 only 72, respondents were belongs to non-vegetarian category; among that, 30% people are skipped, while 70% population consumes one or less portion of meat and fish per meal.

f) Eggs: Similar to meat / fish, the consumption of egg was reduced as only 70% population ate two or less than two portions while 30% peoples skipped from their daily meal.

g) Consumption of water: Water in important mediator for all biochemical processes, and it is suggested that, a healthy adult human should consume minimum of 3-5 liters of water every day. With this coherence we studied the effect of lockdown on consumption of potable water and results showed that (figure 4), before lockdown 80% or population drunk 3-4L or more water per day, while that percentage was drastically reduced up to 20% during or after lockdown.

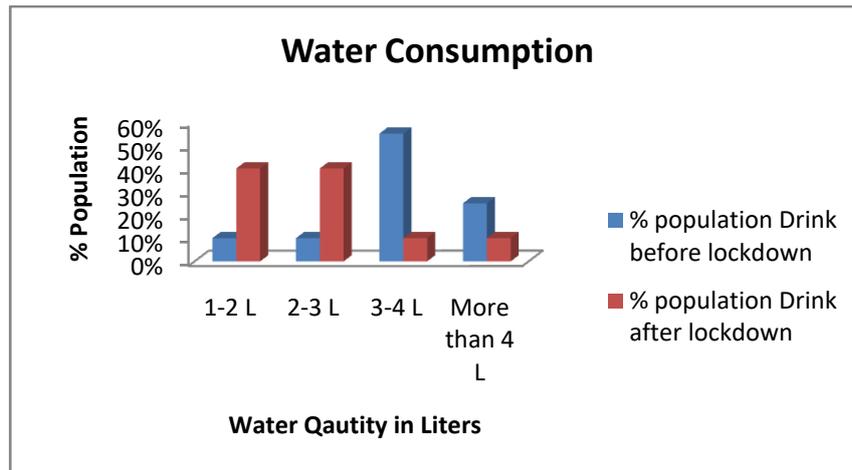


Figure 4: Change in Water Consumption during or after Lockdown

3. Changes in Lifestyle during lockdown:

Routine lifestyle is important and unique aspect of every individual, which included sleeping hours, reading, watching television, physical activities, etc. Each and every individual makes some efforts to maintain regular and routine lifestyle as it affects the physiology and psychology at the most. In this regards, we studied the effect of lockdown on sleeping hours and physical activities of humans.

a) Sleeping hours: It is recommended that, a normal adult human beings should take sleep at least 8 hrs a day. Our results revealed that (figure 5), before lockdown, 60% of peoples adhere to the recommendation while that percentage was drastically decreased to 20% after or during lockdown. Moreover, 60% of population sleeps more than 9 hrs. during pandemic condition.

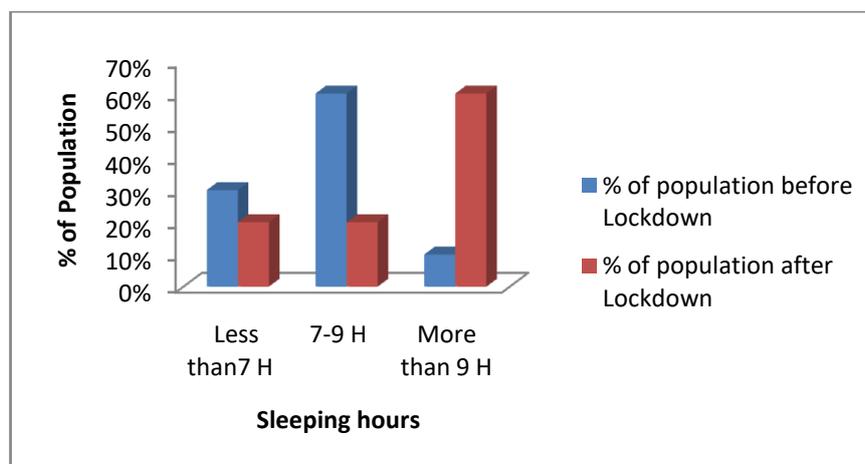


Figure 5: effect of lockdown on sleeping hours

b) Physical activities: Before pandemic all of the studied population was very much busy in various physical activities such as swimming, running, playing cricket or various sport games, in contrast to this, during or after lockdown, the percentage of outdoor physical activities were almost stopped. However maximum population prefers Yoga and other indoor games at home (figure 6).

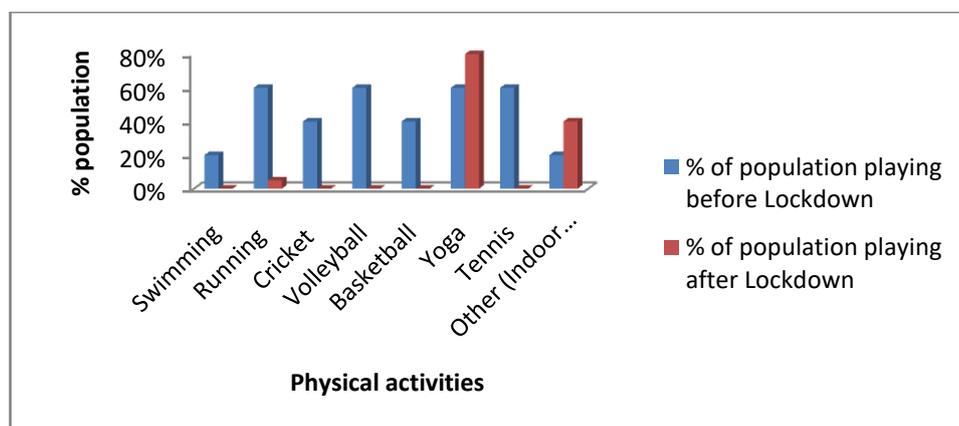


Figure 6: Effect of Lockdown on physical activities of human

Discussion:

This population based study provides a snapshot of dietary habits and lifestyle of peoples who participated in survey. To our knowledge this study was among one of the first to investigate the immediate effect of lockdown on dietary habits and lifestyle changes among peoples of Solapur district in Maharashtra state. As far as dietary habits are concerned, we observed drastically change in availability of food, consumption of food items and water. This may be due to strict government regulations, as most of the shops were closed leading to unavailability of food; moreover transportation facilities were also stopped, so it block the supply chain and consequently there is development of shortage. Moreover, some vendor sales food products on increased price which are not feasible to common peoples.

As far as food consumption is concern, due to lack of physical activities and unavailability of routine food products, many people changed their regular diet; more specifically they reduced their diet. Similarly the consumption of water was also reduced; as water consumption are mostly associated with physical activities.

Lifestyle mostly affects the physical and mental health of human beings. In present investigation we observed that, before lockdown the average sleeping time of about 90% of studied populations was around 7-9 hours a day; in contrast the sleeping time of 80%

population was increased to more than recommended i.e more than 9 hrs. This may be due to most of the participants in the studied population were belongs to students and working peoples group; so during pandemic, offices and educational institutes were closed, thus due to less workload peoples get more time to sleep. With concerns with physical activities, before lockdown almost 80% of population performs various outdoor physical activities, while that percentage was drastically reduced up to 10% during pandemic condition. Moreover the indoor activities like Yoga and other indoor games were increased. This change is may be due to legal restrictions imposed by government to combat COVID-19.

Conclusion:

In total 120 participants from different age groups has participated and shared their experience regarding dietary habit and lifestyle during or after lockdown through questionnaire. The analyzed results showed that, due to unavailability of food items many people reduced their regular diet and outdoor physical activities. Though many of the dark sides of the lockdown, it made positive impact on people to some extent that, they know the importance of good hygiene practices, eating a balanced diet and most important is environment pollution sharply decrease.

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IMPACT OF COVID 19 ON RESTAURANT BUSINESS IN DIMAPUR

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Abstract:

Hospitality business was one of the worst hit businesses in Dimapur during the national lockdown declared in response to the worsening situation of COVID 19 spread in India. The lockdown which was initially declared for twenty one days (from 24th March, 2020 to 14th April, 2020) was later extended in three more phases till 31st May, 2020. The restaurant business in Dimapur reeled under this challenge particularly because a large number of them are small to medium scale businesses with limited capacity to sustain through long periods of slow business. The post lockdown phase saw the reopening of the restaurant business but the pandemic continued to have its impact on this sector. This paper focuses on the impact of COVID 19 on restaurant business in Dimapur during and after the nationwide lockdown declared to tackle the first wave of the disease.

Key Words: Restaurant Business, Dimapur, COVID 19.

JEL Classification: M20, M310

Introduction:

Restaurant businesses tend to thrive in urban areas which are major tourist attractions. Dimapur is one of the urban centers of Nagaland which gets a fair share of commuters as it is the gateway to other parts of Nagaland for people visiting from other parts of the country or from out of India. Dimapur also has a young population fond of eating out. Approximately 200 restaurants and cafes are running their businesses in Dimapur. Apart from indigenous restaurants, Dimapur has also over the years seen a growing number of food franchises such as Pizza Hut, Dominos, KFC, Baskin and Robbins etc opening their outlets here. The growth of this sector has not only contributed to the state GDP but has also opened job opportunities for many skilled as well as semi skilled workers. However, this sector proved to be one of the most vulnerable sectors under the COVID 19 pandemic. Uncertainty and anxiety created by the pandemic made many people wary of eating out even when the lockdown restrictions were

lifted as people preferred to eat at home rather than among strangers in a restaurant. Consumers who perceive the threat of the COVID19 pandemic to be high evaluate the private dining restaurant and private dining table highly (Kim and Lee, 2020). Since many of these businesses they do not offer home delivery or take out services, they faced complete loss of income not only during the lockdown phase but also in the post lockdown phase and necessitated a rethinking of their policies. Learning for the future considers the need for changes in management and investment so that companies can be better prepared for similar situations (Madeira, *et al.*, 2021). The reduction in the gravity of the COVID 19 situation in the state of Nagaland helped to change this situation and the restaurants in Dimapur again started getting their customers. But the losses suffered in the past and the ongoing character of the pandemic together worked to retain a negative influence on this sector. A unique transformation needs to be opted by the stakeholders in order to keep the hospitality sector new and interesting (Rahman, 2020). Unless the restaurant sector brings changes in the way they operate, surviving the pandemic is going to be a mammoth task.

Statement of the Problem:

Restaurant businesses along with other businesses were out of business during the lockdown. However, apprehensions and uncertainties associated with eating food from outside caused comparatively greater problems for such businesses. For the restaurant businesses operating in Dimapur the problem of survival is even more acute as most of such businesses are small or medium scale with little to none sustaining capacity and contingency plans.

Objectives of the Study:

1. To find the extent of the impact of the pandemic on restaurant business in Dimapur during the first wave.
2. To find how such businesses have been operating since the time lockdown was lifted.
3. To find if such businesses applied any contingency measures to remain floating.
4. To find how such businesses are looking into their future prospects.

Research Methodology:

The study is based on both primary and secondary data. The primary data was collected from 40 restaurants operating in Dimapur out of a total of approximately 200 such businesses operating in the city during the time period February 2021 to April, 2021. The 40 restaurants were selected through convenient sampling and data was collected through a self constructed

questionnaire. Secondary data was collected from reputed journals, newspapers and online sources.

The primary data has been analyzed by using simple percentage analysis and represented through pie diagrams.

Literature Review:

Jungkeun Kim and Jacob C. Lee in their research paper Effects of COVID 19 on preferences for private dining facilities in restaurants (2020) found that the perceived threat of COVID 19 increases the preference for private dining and gave a solution to the restaurant business to tackle the problem of reducing customers under the pandemic situation by providing private dining rooms or private tables.

Mujeeb ur Rahman in his article COVID 19 Impact: How hotels and restaurants are gearing up to woo price conscious customers (2020) expressed fear that the hospitality industry could be the last to recover from the pandemic’s impact. He said ensuring safety and hygiene along with offering affordable meals could help this industry to recover its losses faster.

A.Madeira, T. Palrao and A.S Mendes in their research paper The Impact of Pandemic Crisis on the Restaurant Business (2020) have identified among the restaurateurs four major themes in the interviews conducted: pessimism as the process of recovery from losses is perceived as slow and difficult, resilience as many believed they can start over, uncertainty as the duration of restrictions imposed due the pandemic are not fixed and opportunities as many thought it is time to redirect their businesses to internal markets.

Analysis of Primary Data:

Table 1: Did COVID 19 affect your Business?

Response	No. of Respondents	Percentage (%) of Respondents
Yes	35	87
No	0	0
Not Sure	5	13
Total	40	100

Table 1 shows that the larger majority of the respondents (87%) believe that COVID 19 has affected their business. None of the respondents believe that their business was unaffected

by the pandemic. A small percentage expressed being unsure about its impact on their business.

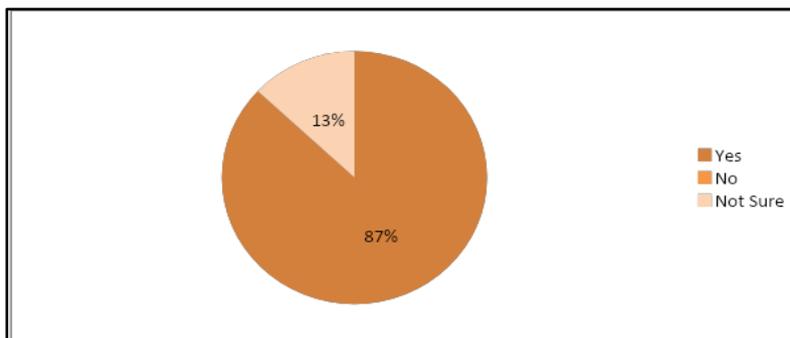


Table 2: Average Number of Customers in a Day before COVID 19

No. of Customers	No. of Respondents	Percentage (%) of Respondents
10 – 50	23	57
50 – 100	13	33
More than 100	4	10
Total	40	100

Table 2 shows that the majority of the respondents (57%) received ten to fifty customers on an average in a day, 33% received between fifty to hundred customers in a day while 4% received more than hundred customers in a day on average.

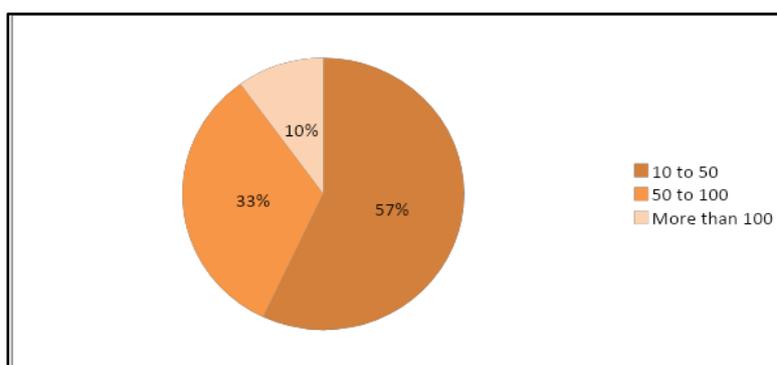


Table 3: Average Number of Customers in a Day since Reopening after the Lockdown

No. of Customers	No. of Respondents	Percentage (%) of Respondents
10 – 50	35	88
50 – 100	5	12
More than 100	0	0
Total	40	100

Table 3 shows that the average number of customers in a day has reduced since reopening of the restaurants after the lockdown. The percentage for the category of fifty to hundred customers reduced from 33 % to only 12%. Similarly the percentage for the category of more than hundred customers dropped from 10% to 0%. These resulted in a percentage spike in the category of customer numbers in the lowest range which is ten to fifty in a day.

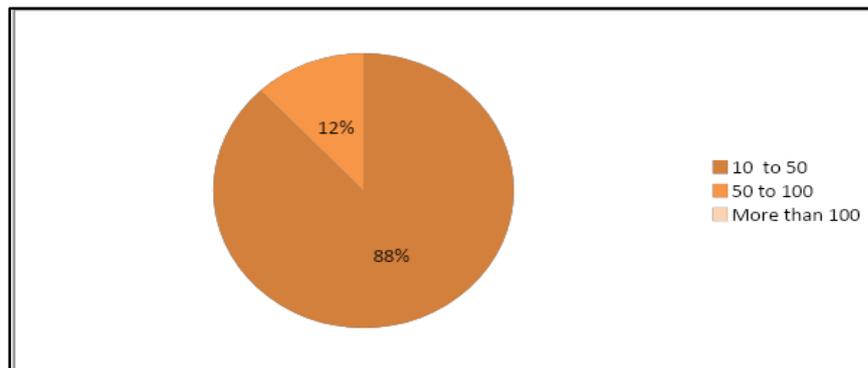


Table 4: Average Number of People Placing Take Out Orders in a Day during Partial Lockdown

No. of Customers	No. of Respondents	Percentage (%) of Respondents
Take Out Option Not Availed	17	42
Less 10	9	23
10 - 50	13	32
More than 50	1	3
Total	40	100

Table 4 shows that almost half of the restaurants (42%) do not have take out facilities. For among the restaurants which have such a facility, the majority (32%) received mostly ten to fifty orders on an average in a day, while 23% received less than ten orders in a day and 3% received more than fifty orders in a day.

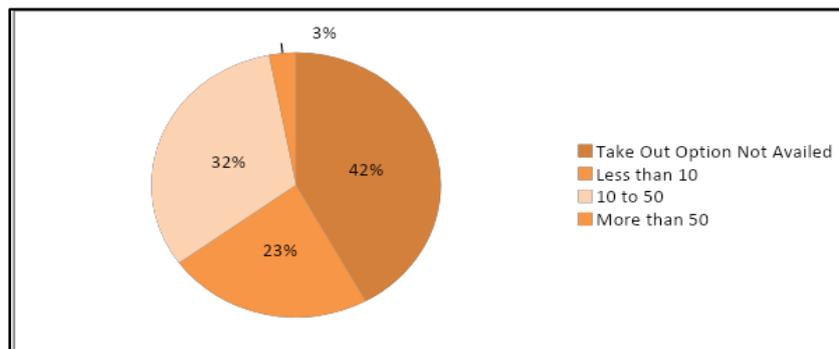


Table 5: Average Gross Earnings in a Day before COVID 19

Average Earnings (in Rupees)	No. of Respondents	Percentage (%) of Respondents
1000 – 5000	10	25
5000 – 10000	21	52
More than 10000	9	23
Total	40	100

Table 5 shows that for the majority of the restaurants (52%) average daily earnings before COVID 19 were in the range of five thousand to ten thousand rupees. 25% were earning in the range of one thousand to five thousand rupees and 23% were earning in the range of more than ten thousand rupees in a day.

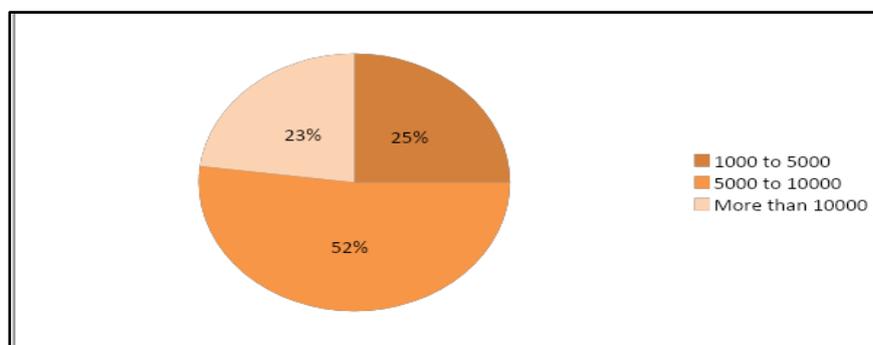


Table 6: Average Gross Earnings in a Day during Partial Lockdown

Average Earnings (in Rupees)	No. of Respondents	Percentage (%) of Respondents
None	17	42
Less than 1000	5	13
1000 – 5000	12	30
5000 - 10000	6	15
More than 10000	0	0
Total	40	100

Table 6 shows that average daily earning was zero for 42% of the restaurants even when total lockdown restrictions were lifted. 13% of the restaurants were earning on average less than one thousand rupees in a day, 30 % were earning in the range of one thousand to five

thousand rupees, 15% were earning in the range of five thousand to ten thousand rupees whereas none were earning more than ten thousand rupees.

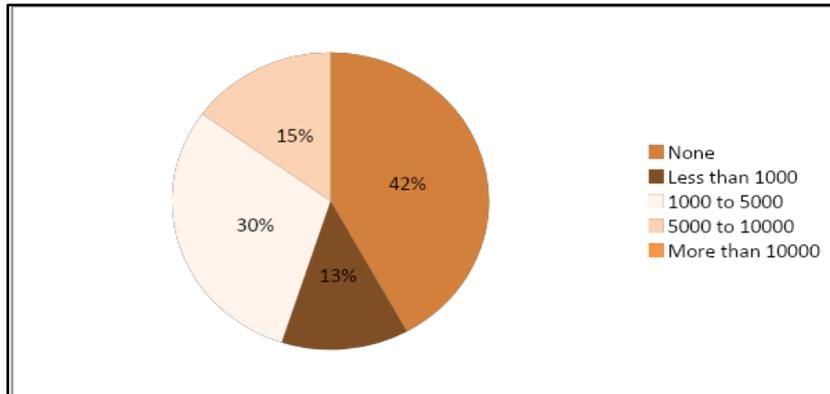


Table 7: Current Average Gross Earnings in a Day

Average Earnings (in Rupees)	No. of Respondents	Percentage (%) of Respondents
Less than 1000	1	2
1000 – 5000	26	65
5000 - 10000	13	33
More than 10000	0	0
Total	40	100

Table 7 shows that in the time period when this survey was conducted the majority of the restaurants (65%) were earning on an average in the range of one thousand to five thousand rupees. 33% were earning in the range of five thousand to ten thousand rupees, 2% were earning less than one thousand rupees and none were earning more than ten thousand rupees in a day.

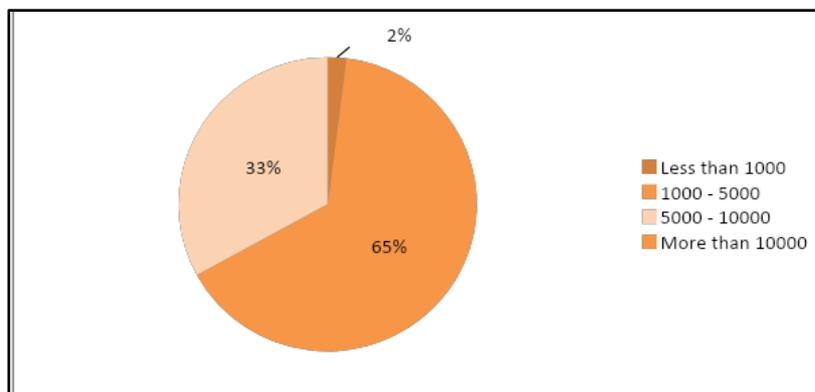


Table 8: Percentage of Improvement in Business since Lifting of Lockdown Measures

Improvement Percentage (%)	No. of Respondents	Percentage (%) of Respondents
0 - 20	14	35
20 – 50	20	50
50 – 70	5	13
70 – 100	1	2
Total	40	100

Table 8 shows that half of the restaurants witnessed an improvement in business in the range of twenty to fifty percent after the lockdown measures were lifted. 35% of the restaurants saw an improvement in the range of zero to twenty percent, 13% saw an improvement of fifty to seventy percent while 2% saw an improvement between seventy to one hundred percent.

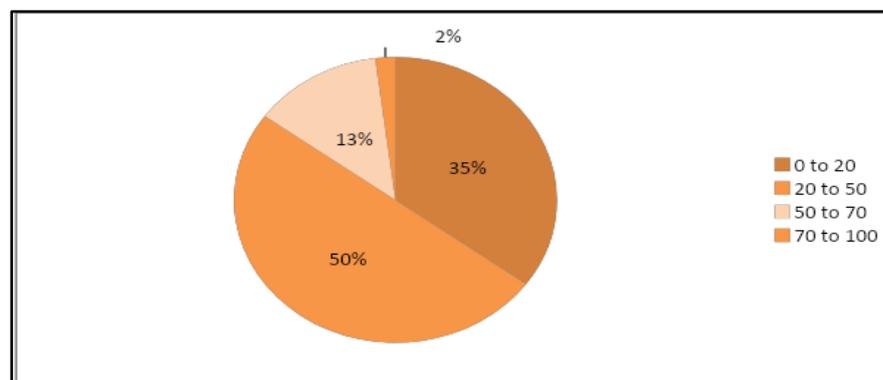


Table 9: Expected Time Period for Recovery of Business if Situation Become Normal

Months	No. of Respondents	Percentage (%) of Respondents
1	3	6
2 – 3	17	44
4 – 5	10	25
More than 5	1	25
Total	40	100

Table 9 shows that the majority of the restaurants (44%) believe that it will take them two to three months to fully recover business if the situation becomes normal. 6% believe it will

take them one month, while 25% each believe it will take them four to five months and more than five months

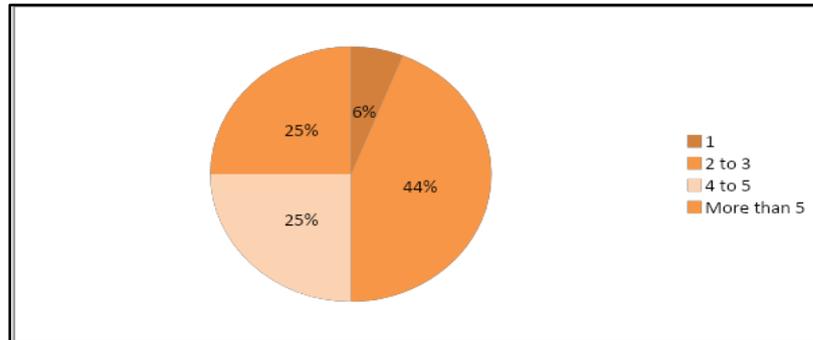


Table 10: Expenses on Maintenance of SOP for COVID 19 after Reopening

Expenses on SOP (in rupees)	No. of Respondents	Percentage (%) of Respondents
None	5	19
Less than 1000	17	39
1000 – 5000	15	35
More than 5000	3	7
Total	40	100

Table 10 shows that 19% of the restaurants are not spending any money on maintenance of COVID SOPs, 39% are spending less than one thousand rupees, 35% are spending between one thousand to five thousand rupees and 7% are spending more than five thousand rupees.

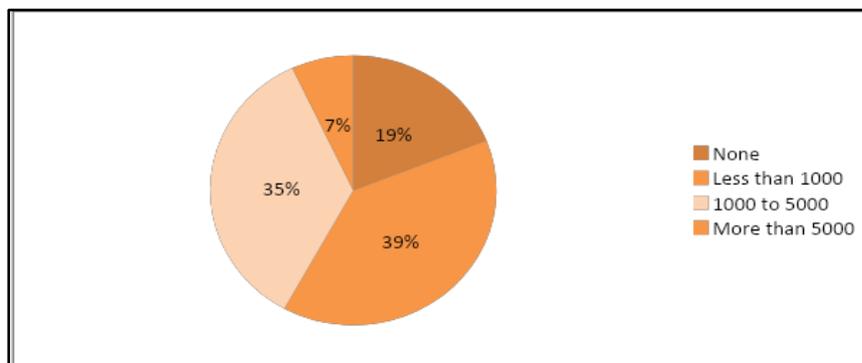


Table 11: Will Vaccination help to Revive Business?

Response	No. of Respondents	Percentage (%) of Respondents
Yes	11	27
No	5	13
Not Sure	24	60
Total	40	100

Table 11 shows that 27% of the respondents believe that vaccination will help to revive their business, 13% do not believe so and the majority (60%) are unsure about it.

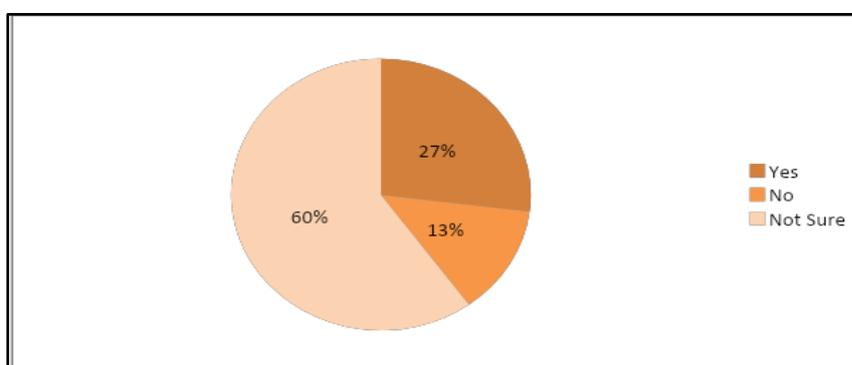
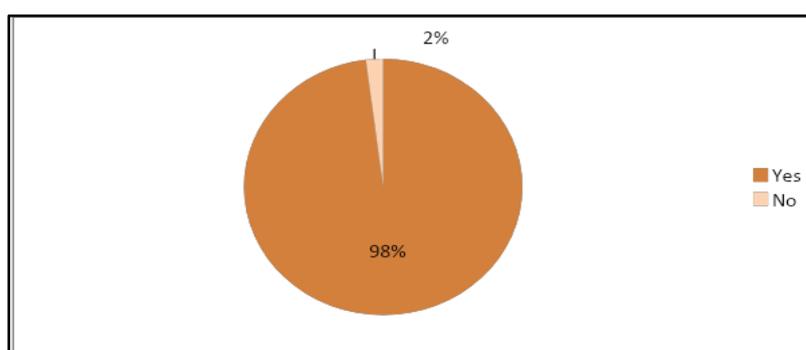


Table 12: Plan to Continue in Restaurant Business

Response	No. of Respondents	Percentage (%) of Respondents
Yes	39	98
No	1	2
Total	40	100

Table 12 shows that 98% of the restaurant runners plan to continue in this business and only 2% are planning otherwise.



Major Findings of the Study:

- The pandemic and the lockdown measures imposed due to it had a major impact on the restaurant business in Dimapur. It is reflected in the reduction in the number of customers as well as gross earnings of such businesses.
- In the intervening period between the first wave and second wave of the pandemic when the situation was gradually returning to normal, such businesses to a certain extent revived their business but the majority believed that it would take them a couple of more months to fully revive if the situation stayed normal.
- Some of the restaurants lack contingency plans to tackle unforeseeable emergencies like the pandemic. Nearly half of the restaurants were fully out of business even during partial lockdown as they did not provide take out service. 19% of the restaurants are not spending any money in maintenance of COVID SOPs.
- In spite of the losses incurred, 98% of the business runners want to continue with this business. Some (27%) are hopeful that vaccination will help to revive their business.

Conclusion:

The restaurant business in Dimapur faced a financial crisis during the first wave of the pandemic. If the normalcy that had returned after the first wave had continued, these businesses were likely to have recovered their losses in less than a year's time. But with the second wave hitting Dimapur and imposition of lockdown again in the state of Nagaland it remains to be seen how many of these businesses will sustain under the pressure.

Suggestion:

1. The restaurants should have contingency plans particularly in terms of diversifying their activities to survive in emergency situations such as the pandemic.
2. The restaurants should invest on maintenance of SOPs to make their customers feel safe.
3. The restaurants should work on a limited items and reasonably priced menu which will not only reduce their expenditures but also appeal to a larger section of their customers.

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SOCIO-ECONOMIC IMPACT OF COVID-19 ON INDIA

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Abstract:

For the past one and a half year now, the world is struggling to combat this dreaded pandemic COVID 19. Science has been trying to find the answer of 'How' and 'Why' of the pandemic. Medicine has been thrown to a violent test of it's character. While an early vaccine was 'Cry of the day', mutant variants wreaked greater havoc, by dismantling the recovery of the nation in the form of second wave. The present article is a review of the emergence of the pandemic, measures taken, it's resurgence and the crumbling down of the nation. It's impacts on various socio-economic spheres have far more reaching consequences than expected. On analysis it's after-effects are far reaching and lingering than expected.

Keywords: COVID 19, Pandemic, Resurgence.

Introduction:

The COVID-19 pandemic in India is part of the global coronavirus disease pandemic of 2019 (COVID-19), which is caused by the coronavirus 2 that causes extreme acute respiratory syndrome (SARS-CoV-2). On January 30, 2020, the first case of COVID-19 in India, which originated in China, was reported [1]. India has the most reported cases in Asia at the moment [2]. India had the second-highest number of confirmed cases in the world (after the United States) as of May 2021, with 25.4 million registered cases of COVID-19 infection and 283,248 deaths [3, 4]. The first cases of COVID-19 in India were recorded among three Indian medical students who had returned from Wuhan in the towns of Thrissur, Alappuzha, and Kasargod, all in the state of Kerala [5]. On the 23rd of March, Kerala declared a state of emergency, followed by the rest of the country on the 25th.

Mumbai, Delhi, Ahmedabad, Chennai, and Thane accounted for roughly half of all registered cases in the country by mid-May 2020 [6]. For the first time on June 10, India's

recoveries surpassed active events [7]. In September, infection rates began to decline, as did the number of new and active cases [8]. Daily cases peaked in mid-September at over 90,000 a day, before falling to under 15,000 in January 2021 [9]. A second wave, which began in March 2021, was much larger than the first, with vaccines, hospital beds, oxygen cylinders, and other medicines in short supply in some parts of the world [10]. By late April, India had surpassed the rest of the world in terms of new and active events. It was the first country to record over 400,000 new cases in a 24-hour period on April 30, 2021 [11, 12]. According to health experts, India's numbers have been underreported due to a variety of factors.

On January 16, 2021, India launched its vaccination programme, and by April, it was administering 3–4 million doses every day [13,14]. For emergency use, India has approved the British Oxford–AstraZeneca vaccine (Covishield), the Indian BBV152 vaccine (Covaxin), and the Russian Sputnik V vaccine. Around 40,298,750 people had been completely vaccinated as of May 15, 2021, with a total of 181,201,743 doses administered [15].

Current scenario 2021:

On January 16, 2021, India started its vaccination programme [16]. Lakshadweep became the last Indian region to register its first case on January 19, 2021, nearly a year after the country's first case was registered [17]. Regular cases had dropped to 9,000 a day by February 2021 [18, 19]. However, by early April 2021, India had experienced a significant second wave of infections; on 9 April, India had reached 1 million active cases,[20]., and by 12 April, India had surpassed Brazil as the nation with the second-highest number of COVID-19 cases worldwide, trailing only the United States [21]. Multiple causes, including highly contagious variants of concern including Lineage B.1.617, have been suggested as possible contributors to the sudden increase in cases.

Lack of preparations, such as temporary hospitals being dismantled after cases began to decline and new facilities not being built [22, 23] and health and safety precautions being poorly implemented or enforced during weddings, [24] festivals (such as Holi on March 29 and the Haridwar Kumbh Mela in April), sporting events (such as IPL [25]), state and local elections in a number of states, and a slowing economy, placed pressure on the government to ease restrictions [26]. There was a sense of exceptionalism focused on the expectation that India's young population and childhood immunisation programme will mitigate the virus's effect [27]. Due to under-reporting of cases in the region, models may have underestimated expected cases and deaths. Between 10th and 14th of April, the Haridwar Kumbh Mela was connected to

at least 1,700 positive cases, with 68 cases among Hindu seers between the 5th and 14th of April. During the pandemic, politicians and activists have been chastised for organising rallies.

Due to high demand, the vaccination programme began to face supply issues; shipments of the Oxford–AstraZeneca vaccine were halted to satisfy domestic demand [28]. There have been shortages of the raw materials needed to produce vaccines domestically [29], and hesitancy and a lack of awareness among smaller, rural populations have also hampered the programme. India had passed 2.5 million active cases by late April, with an average of 300,000 new cases and 2,000 deaths per day.

Some researchers speculated that this was an undercount; epidemiologist Bhramar Mukherjee estimated that the pandemic's true death toll in India could be two to five times higher than the official figures. India recorded 350,000 new cases and over 2,800 deaths in a single day on April 26. India registered over 400,000 new cases and over 3,500 deaths in a single day on April 30. According to a study published in the *Lancet*, India could face up to one million (ten lakh) deaths by August 1, 2021. The second wave put a significant strain on the healthcare system, resulting in an unprecedented shortage of liquid medical oxygen due to unexpected demand, transportation delays, and a lack of cryogenic tankers.

On April 21, 22 COVID-19 patients who needed ventilators died after an accident caused a leak in the hospital's main oxygen supply. Honorable Prime Minister Shri Narendra Modi met with liquid oxygen suppliers via videoconference on April 23, acknowledging the need to "provide solutions in a very short time," and praising initiatives such as increased production and the use of rail (with the Indian Railways transporting tankers via "Oxygen Express" trains)[30] and air to supply oxygen supplies.

The PM CARES Fund declared on April 25 that it will allocate funds to build 551 pressure swing adsorption oxygen plants at public health facilities. A number of countries have declared that they will provide India with emergency assistance. Member states of the European Union have declared that they would use the EU Civil Protection Mechanism to give oxygen, drugs, and ventilators. Oxygen concentrators and extra ventilators were to be sent from the United Kingdom. Following political pressure, the US offered to provide personal protective equipment as well as remove export restrictions on vaccines and vaccine components in order to send raw materials for the Oxford–AstraZeneca vaccine.

Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID), reported that the United States had not ruled out sending supplies of the AstraZeneca vaccine to India, which has yet to be authorised in the United States.

Treatment and study:

On October 13, 2020, NITI Aayog member Vinod K. Paul, Secretary, Ministry of Health & Family Welfare, Rajesh Bhushan, and other officials spoke at a press conference in New Delhi about COVID-19. The COVID-19 battle mission of the Council of Scientific and Industrial Research is depicted on a poster. In March 2020, three patients in Rajasthan were cured of malaria, swine flu, and HIV thanks to a combination of anti-malaria, anti-swine flu, and anti-HIV.

The Indian Institute of Chemical Technology, the Council of Scientific and Industrial Research (CSIR), and Cipla formed a joint venture to research and produce anti-COVID-19 drugs in the same month. Another Indian company, Stempeutics, has revealed plans to develop a stem cell-based treatment for COVID-19 patients.

In April, funds were released to begin research on a variety of preventive agents. The ICMR's National Task Force for COVID-19 approved the use of hydroxychloroquine for the treatment of high-risk cases on March 23. According to figures, India had about 40,000 ventilators in March 2020, with 8,432 in the public sector. DRDO and ISRO, among other Indian PSUs, companies, and startups, have since repurposed their manufacturing lines to produce general PPEs, full body suits, and ventilators.

They're still working on low-cost or portable medical devices. The goal was to boost production of low-cost, compact, and portable ventilators that could handle multiple patients at once. As a result, some of the world's smallest and cheapest ventilators were developed. With the aid of PSUs, the government hopes to double the existing capacity of ventilators by June 2020. Major private automakers have also been asked by the government to investigate the prospect of producing ventilators at their facilities. Until the end of May, Maruti Suzuki will supply 10,000 ventilators in partnership with AgVa Healthcare. In May 2020, India was manufacturing about 200,000 PPE kits and 250,000 N95 masks per day, up from zero in the recent past. India had overtaken China as the world's second-largest manufacturer of PPE body coveralls by the end of the month. COVID-19's genome has been sequenced at the Centre for Cellular and Molecular Biology. In May, CCMB announced collaboration with Eystem Research to develop a novel coronavirus strain in human lung epithelial cells for antiviral drug research

and trials. The ICMR invited health institutions and hospitals to take part in convalescent plasma therapy and plasma exchange therapy trials on April 12th.

The ICMR later sent a list of such institutes to the DCGI for approval to begin trials [31], which the DCGI approved. The ICMR has given permission to many states to begin clinical trials of plasma therapy. In April, a 49-year-old man on ventilator support in Delhi became the country's first patient to recover from plasma therapy.

The initial results of the plasma therapy treatment on four patients were positive and motivating, according to Delhi CM Arvind Kejriwal, who added that they had planned to perform it on three more patients. The ICMR later claimed that there is insufficient evidence to support convalescent plasma therapy as a standard therapy, identifying it as an emerging and experimental treatment.

It comes with some drawbacks, such as life-threatening allergies and lung injuries. Since then, the ICMR has begun multi-center clinical trials to ensure that the medication is safe and effective in treating COVID-19 patients throughout the world. India approved the repurposing of a generic version of the antiviral drug favipiravir, marketed as "FabiFlu" by Glenmark Pharmaceuticals, for the treatment of mild-to-moderate COVID-19 symptoms in June 2020. Cipla, the Indian Institute of Chemical Technology, Jenburkt, and Lupin Limited later received approval in India for generic versions that were less expensive than FabiFlu [32]. In July 2020, the Indian company Biocon obtained emergency approval for the repurposed medication Itolizumab to be used in the treatment of chronic plaque psoriasis, one of the disease's symptoms. Cadila Healthcare received emergency approval on April 23, 2021, to repurpose Peginterferon alfa-2b, sold as Virafin, a hepatitis C treatment, as a treatment for mild COVID-19 in adults.

On May 8, 2021, the Indian Drugs Controller General approved the use of 2-deoxy-D-glucose, a medication developed by DRDO in partnership with Dr. Reddy's Laboratories, as an adjunct or alternative therapy for treating mild to extreme COVID-19 cases.

Impacts of COVID 19:

Displacement of migrant workers has an effect. During the COVID-19 pandemic, Indian migrant workers were at risk:

Migrant workers stranded in Delhi during the fourth period of the lockdown Tens of millions of migrant workers were laid off as a result of the 2020 lockdown. Many migrant

workers were left jobless after factories and workplaces were closed. As a result, they agreed to walk hundreds of kilometres back to their ancestral villages, mostly accompanied by their friends. As a result, the federal and state governments took a variety of steps to assist them. The federal government then declared that it had requested state governments to set up immediate relief camps for migrant workers returning to their home countries [33], and that it had issued orders securing migrants' rights.

The central government claimed in its report to the Supreme Court of India on March 30, 2020, that migrant workers, fearful of their survival, moved in the panic caused by false news that the lockdown would last more than three months. In early May, the Indian Railways were finally given permission to run "Shramik Special" trains for stranded migrant workers and others [34] but this change came with its own set of complications. The Supreme Court acknowledged on May 26 that the migrant workers' issues had not been resolved and required the federal government and states to provide free food, shelter, and transportation to stranded migrant workers.

Drug scarcity:

Indian pharmaceutical companies warned in January 2020 that if the pandemic situation in China worsened, drug supplies could be jeopardised. [35]. China supplies roughly 70% of India's pharmaceutical ingredients [36]. In March 2020, India imposed export restrictions on 26 pharmaceutical ingredients, signalling imminent global shortages. Some COVID-19 patients turned to the black market during the second wave of the pandemic in India due to drug shortages. Other relevant COVID-19-related drugs faced dwindling stocks and a dramatic increase in raw material costs in April 2021.

The effect of the COVID-19 pandemic on education:

The union government ordered the closure of schools and colleges on March 16, 2020. The Central Board of Secondary Education (CBSE) issued updated examination centre guidelines on March 18 that included social distancing steps. The CBSE and JEE exams for admission to Indian Institutes of Technology and other engineering colleges were postponed on March 19 [37]. School exams were postponed or cancelled throughout the country, and younger students were either promoted automatically or based on prior results [38, 39, 40]. The Civil Services Examination interview has also been delayed by the Union Public Service Commission. Just a few Indian educational institutions have successfully adapted to e-learning

and remote learning; the digital gap is exacerbated by severe energy shortages and a lack of internet access.

The economic effect of the COVID-19 pandemic:

Also see the COVID-19 pandemic's economic effects. The economic effect of the second wave has been less serious than the first wave due to fewer limits on social activity during the second wave compared to the first wave's lockdown steps.

As compared to the first wave, socioeconomic indicators such as power demand, labour participation, and railway freight traffic dropped less during the second wave. Considering the intensity of the second wave, the first wave has increased domestic economic resilience, which is evident throughout the second wave. "Economic activity has learned to work 'with Covid,'" the Indian Finance Ministry wrote in their Monthly Economic Review for April 2021, which was published on 7 May 2021. Poverty has risen in India since the start of the pandemic, and livelihoods have been impacted.

COVID-19's Impact on the NIFTY 50 Index of the National Stock Exchange of India (1 Jan 2020 to 19 May 2020). "The NIFTY 50 is the National Stock Exchange of India's (NSE) benchmark broad-based stock market index for the Indian equity market." S&P Bombay Stock Exchange (BSE) 500 Index (1 January 2015 to 1 April 2021).

The time period after March 2020 is highlighted in blue:

On March 2, 2020, Indian stock markets experienced a flash crash following the Union Health Ministry's announcement of two new reported cases [41]. Following WHO's declaration of the outbreak as a pandemic on March 12, 2020, Indian stock markets experienced their worst drop since June 2017.

India's capital markets suffered their worst losses in history on March 23, 2020 [42]. The SENSEX dropped 4000 points (13.15 percent), while the NSE NIFTY dropped 1150 points (12.98 percent). The SENSEX, on the other hand, reported its biggest gains in over a decade on March 25, 2020, one day after the Prime Minister declared a full 21-day lock-down. From October 2020 to April 2021, the domestic stock markets experienced a positive rally.

Freedom of expression:

On April 25, 2021, the government announced that it had issued an emergency order requiring Facebook, Instagram, and Twitter to delete at least 100 social media messages,

including posts that it claimed were disinformation, causing fear among the public, or obstructing the pandemic response.

West Bengal Minister of Labour and Law Moloy Ghatak, filmmaker and journalist Vinod Kapri, MP Revanth Reddy, and actor Viineet Kumar have all issued critical tweets. A Supreme Court of India bench led by Justice D Y Chandrachud commented on the government's response to the pandemic on April 30, 2021, in a suo moto case "There should be free flow of information; we should hear citizens' voices," he said, equating its restriction to contempt of court. This is a major national emergency. There is no reason to believe that complaints posted on the internet are always false [...]. There should be no restrictions at all." [43, 44]. Workers in the healthcare field and those on the front lines

The impact of the COVID-19 pandemic on healthcare workers:

During the pandemic in Kerala, healthcare staff The Indian Medical Association (IMA) announced on August 8, 2020 that 198 doctors had died as a result of COVID-19 [326]. By October 2020 [45, 46] and 3 February 2021, the number had risen to 515 and 734 [47, 48]. However, the health ministry declared in the Rajya Sabha and Lok Sabha on February 2 and 5, 2021, that COVID-19 had killed 162/174 physicians, 107/116 nurses, and 44 ASHA staff/199 healthcare workers. The estimates come from the government's "COVID-19 Insurance Scheme for Health Workers."

According to the IMA, there have been 747 deaths of doctors as of April 17, 2021 [49]. Covid has contaminated tens of thousands of physicians, nurses, and other health care professionals [49]. Starting on January 16, 2021, healthcare staff and frontline workers in India were given covid vaccinations first. This involved 9,616,697 healthcare employees and 14,314,563 frontline workers, with the majority receiving their second dose by May 2021 [50].

Religion is one of the most important aspects (impact):

The impact of the COVID-19 pandemic on religion is the main topic of this paper. In Kolkata, India, a priest performs Durga Puja in October 2020. The Prime Minister and Union Home Minister tweeted on March 4, 2020, that they will not be participating in Holi celebrations due to COVID-19. As a result of the pandemic and ensuing lockdown, many religious festivals were often observed at home or with lower than average public turnouts in order to adhere to social distancing guidelines.

Easter (12 April), Eid ul-Fitr (23 May), Eid ul-Adha (26 June), Guru Arjan Dev Martyrdom Day (16 June), and Krishna Janmashtami (11 August) were all impacted [51, 52].

The Char Dham was organised in a regulated manner; pilgrims numbered 400,000 in 2020, compared to 3,800,000 the year before. Many religious organisations adapted and used livestreaming, radio, and television to communicate with their supporters. The 2020 Tablighi Jamaat COVID-19 hotspot in Delhi [53] and the 2021 Haridwar Kumbh Mela [54]. The state of Uttarakhand, where the Kumbh took place, saw an 1800 percent increase in COVID-19 during the period the Kumbh was held [55, 56]. 2021 saw numerous religious events disregard social distancing guidelines such as Holi and Eid.

India's rural and semi-rural areas:

COVID cases in rural and semi-rural India increased from 40% in mid-July 2020 to 67 percent in August 2020. This increase in COVID cases was largely attributed to the movement of COVID infected migrant workers from urban areas back to their native villages. Following this report, the Uttar Pradesh state government announced that it will pay poor families 5,000 rupees (\$70) to cremate or bury their loved ones' bodies [57].

Transportation:

Private airlines such as IndiGo and Go Air began cancelling flights on March 17, 2020. On March 19, the Government of India announced that no international flights would be allowed to land in India beginning March 22 [58]. On March 23, the union government announced the suspension of all domestic flights in the country beginning March 25 [59]. On the Delhi Metro, there are signs that separate people based on their social status. The Indian Railways took a number of steps to combat the pandemic. Initially, this included removing curtains and blankets from AC coaches [60] raising platform tickets [61] and cancelling 3700 trains [62]. Metro services across India were also suspended [63]. On March 22, all train services in India were cancelled, with the exception of goods trains (roughly 12,500 trains) and non-essential passenger transport, such as interstate transport buses.

Other impact:

There were several incidents of panic buying related to the pandemic in India in March 2020 [64, 65]. Retailers and consumer goods firms saw their average daily sales more than double on 19 March as consumers rushed to buy essentials ahead of PM Modi's address to the nation [66]. PM Modi assured citizens that there was enough food and rations supplies and advised them against panic buying. The Indian Open badminton tournament [67], I-League, 2020 Indian Super League Final [68, 69]. TCS World 10 Bengaluru, the IAAF Gold Label Road Race [70] and a FIFA World Cup qualification match (India versus Qatar) were all suspended, postponed, or held behind closed doors in India [71]. The Border Security Force decided to

conduct the Wagah-Attari border ceremony without any spectators as of 7 March 2020 [72]. The Padma Awards ceremony, which was scheduled for 3 April 2020, was postponed [73]. On 17 March 2020, it was announced that all historical buildings in the country would remain closed to visitors; on 6 July 2020, the monuments were reopened to the public. The International Indian Film Academy Awards, which were scheduled to take place on March 27, 2020, were canceled. Cinemas were closed, and film bodies decided to stop producing films, TV shows, and web series until March 31, 2020. On March 25, 2020, all major video streaming services in the country announced that they would restrict high definition video streaming on cellular networks.

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AWARENESS CREATION AMONG THE MASSES CONCERNING THE MENTAL HEALTH IN THE SCENARIO OF LOCKDOWN

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Abstract:

One out of every seven Indian suffers from psychiatric illness of varying magnitude. Indians account for almost a quarter of all suicide deaths worldwide. SARS-CoV-2 leaves a trail of neurological complications in its wake. In the wake of COVID-19, parkinsonism and other neurodegenerative diseases are becoming more common. Mental wellbeing care for health care workers (HCWs) on the front lines of the COVID-19 pandemic is becoming more widely recognized around the globe. This paper will be a broad view of the need of awareness about the concern of mental health.

Introduction:

Mental wellbeing is a big problem around the world, and India is not far away. When we look at progress in the world of mental health, it seems to be gradual. Neuropsychiatric illnesses account for about 14% of the worldwide disease burden [1]. Because of an insufficient understanding of the interplay between psychiatric disease and other health conditions, the burden of mental disorders is likely to have been underestimated [2]. Prioritization focused on the burden of health challenges and mitigating inequality in relation to determinants and remedies for health problems remain significant concerns. In most low- and middle-income economies, mental health services have been unable to arrive. Existing public-health priorities and their effect on financing are examples of roadblocks. Few percentages of people with mental health care training, as well as a lack of mental health leadership in public health is adding on. In terms of increasing recognition of mental illnesses as core priorities of global health intervention, there are prospects. In primary care and other echelons, the internet, big data, and mobile phones have proven to be effective in amplifying basic field approaches [3].

Good results have come from mental health advocacy programs also. The mental health care delivery system faces a problem due to a lack of awareness about mental disorders. In low-income nations, community-based systems have also shown good outcomes. Ignorance and misinformation have negative effects such as stigma and prejudice. Mental health literacy is being more widely recognized as a significant indicator of mental health condition understanding and knowledge. Recognition, triggers, self-help, facilitation of therapeutic action, and accessing the awareness highway are all part of mental health literacy [4]. Resources now freely available should be used to counteract attitudes that prevent awareness and effective help-seeking. Because of the effects of stigma, numerous programs have been developed around the world to combat prejudices and inequality that cause social disability [5]. Mental wellbeing literacy campaigns have had a positive effect and have the potential to bring about positive change.

Background:

COVID-19 was declared a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO) on January 30, 2020 [6]. To date, there have been over million confirmed cases and several deaths worldwide. PHEICs may be a major mental health problem for populations, especially in developed countries, where the risk is exacerbated by poor socioeconomic conditions.

When scarce resources are devoted to pandemic control, mental health issues and therapy normally take a backseat. As a result, the possibility of Posttraumatic stress disorder (PTSD) in the wake of the pandemic could pose a significant threat to the country's mental health system [7]. In a brief period of time, the government, specialist associations, civil society organizations, and other relevant partners have devised a number of mental health-related initiatives. A propose to address mental health problems during the COVID-19 pandemic by conducting a rapid synthesis of available data based on global interactions and reactive strategies is required. Reports of stigmatization of front-line personnel as a result of their fear of contracting the virus have surfaced around the world, leading to a rise in mental health issues such as anxiety and depression [8]. Suicide rates among the economically disadvantaged could rise as a result of this. The economic consequences of 'The Unlimited Lockdown,' as well as the expected slowdown, are expected to be the worst global economic downturn since "The Pronounced Depression."

Issues of mental wellbeing after the COVID-19 pandemic:

Stress, anxiety, depressive symptoms, insomnia, denial, frustration, and terror are the main mental health problems linked to the COVID-19 pandemic, according to reports [9]. Individuals can experience sadness and depression as a result of the death of a loved one, as well as anxiety and panic as a result of the uncertain future and financial turmoil resorted to some drastic steps. COVID 19's reports related to suicides have become exceedingly popular in the news around the world. This is a pattern that also affects India. The report found that the prevalence of mental health conditions is rising across all demographic groups [10].

Doctors, nurses, community health professionals, sanitation workers, police officers, and other volunteers on the front lines around the world are in an extraordinary condition. Jobs on the front lines are forced to make impossible choices and perform under constant stress. Working in difficult circumstances and little resources has a negative impact on their personal and family lives, as well as putting them in a morally damaging position. These signs and symptoms can lead to mental health issues such as depression, post-traumatic stress disorder, and even suicidal ideation. COVID-19 has been listed as a vulnerable group of India's geriatric community. Anxiety, fatigue, and anger are some of the psychological effects of these populations. For older adults who are already suffering cognitive loss, ageing, social alienation, and depression, the mental health effect may be more challenging. Furthermore, the disease's progression is on pronounced in the elderly, resulting in a higher mortality rate. It is not good to state the condition that has looked at the impact of the COVID-19 pandemic on mental health in vulnerable populations.

During COVID-19, prevention techniques for mental health problems were created:

The global context:

In the COVID-19 outbreak, a national study of psychological distress among Chinese citizens was conducted. The first detailed recommendations on emergency psychiatric distress management in persons afflicted by the disease were published by the National Health Commission of Mainland China. The Ministry of Health in Singapore has kept the public informed about the outbreak's progress with daily news bulletins. The Chinese government has also developed social media networks to combat the dissemination of misleading information and "fake news." 'Expert-teacher-coach' intervention was one of the strategies used by China,

where the pandemic was first put out. Artificial Intelligence-based 'Tree hole rescue' has already been used to tackle mental health issues, and it may be used in other countries such as India [11]. The Centers for Disease Control and Prevention (CDC) urges parents to keep an eye on their children's actions. Since not all children and teenagers respond to stress in the same manner, keeping an eye out for warning signs is critical. Excessive worry, excessive feeding, excessive sleeping habits, skipping learning, and 'acting out' activities are some of the most important improvements to watch for in teenagers. Intervention techniques used by other high-income countries may or may not be successful in the case of India or other low income countries. Parents should watch for the following behaviors in their children, according to the CDC: Unhealthy eating or sleeping habits, excessive worry or depression, teens' excessive sleeping habits, poor academic success or avoidance of education, attention problems and aversion to previously loved sports [12].

The Indian context:

Owing to the huge proportion of socially and economically disadvantaged people in India, mental health problems in the light of the COVID-19 pandemic are more complicated. During the epidemic, the MOHFW-GOI has established a toll-free helpline for 'Behavioral Health' and 'Mental Health.' Guidelines outlining mental health and psychosocial considerations are among the current mental health-related programs. All scares sparked by massive disinformation on social media should be specific and important to India's circumstances. It also includes materials on coping with depression after the crisis, understanding the lockdown situation, dealing with loneliness, dealing with mental health problems during the outbreak, and understanding the lockdown situation [13]. During the co-virus epidemic, the National Institute of Mental Health and Neurosciences (NIMHANS), the All India Institute of Medical Sciences, and the Indian Psychiatric Society have taken up the responsibility of promoting and managing health problems [14]. Mental wellbeing is a global issue in spite of itself, and the COVID-19 pandemic exacerbated the problem significantly. Teams should develop action strategies for various classes of individuals independently. It should also emphasize raising awareness about other types of mental illness as well as warning signs to watch for. The WHO advises that a 'Psychological intervention treatment unit' should be established to attend to those afflicted by the pandemic. It may be a stand-alone unit or a member of a larger medical team that cares about those who are affected. The workforce should be made up of doctors, social psychologists, and psychiatric assistants, and the departments should be divided into two

groups. Each team can form a different team with each of the following groups: reported cases, suspicious cases, individuals with minor symptoms, and those under quarantine [15].

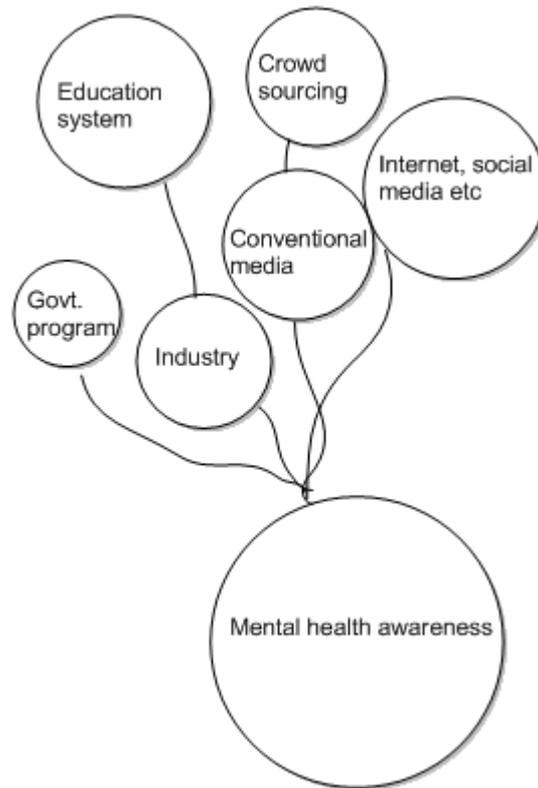


Figure 1: The different sources which can combat mental health

Conventional media:

The previous action in the area of mental health consciousness relied heavily on the media. It is a comparatively easy measure to make evidence-based mental health knowledge readily accessible to journalists. It is therefore incumbent on mental health providers to take the lead.

Government programs:

The government continues to be the single largest spender in the mental health sector. The National Rural Health Mission is working to bring mental health with primary care in rural areas too.

Educational systems:

The majority of serious and crippling psychiatric disorders begin before the age of 24. The majority of them are part of the school system. From incorporating mental health

narratives into curricula to engaging partners for early warning and simple solutions, there is a lot that should be done.

Industry:

Mental illness causes a substantial lack of productive workers in the structured market. It is important to invest in mental health consciousness in a concerted manner not only as a matter of corporate social responsibility but also to sustain competitiveness.

Internet, social media, cellphones etc.:

Handheld devices and social media can be game-changers in terms of spreading successful mental health treatments through targeted amplification, not just in terms of increasing content. With the increased use of big data, decision-making would be aided by an interpretation of subtle and dispersed trends over vast quantities.

Crowd sourcing:

Crowd funding has proven to be an effective method of testing radical theories that are beyond the mainstream. It is the true participation of physical and interactive societies, harnessed to effect progress. Person concepts should work in tandem with nongovernmental organization success stories.

The related scenario:

Previous research has discovered that outbreaks can have a wide range of psychological effects on humans. The main mental health signs of the COVID 19 pandemic were stress, anxiety, depressive symptoms, insomnia, rage, and terror, according to our findings. People can feel fear and anxiety about being sick or dying, helplessness, or blaming those who are sick, all of which may lead to triggering in mental breakdown [16]. Anxiety and stress can trigger new psychological problems in people that do not have a mental disorder, aggravate the situation of those who already have one, and bring trauma to those who care about them. People from Wuhan, for example, were singled out and blamed by other Chinese for the 'China virus' epidemic in the summer of 2011. Internationally, people in China have been stigmatized for being afflicted with the 'virus,' with calls to blame it on 'the Chinese virus.' For the first time, the planet has had to deal with the effects of an epidemic, which resulted in the deaths of several people and the dissemination of the disease across the globe. It is attempted to micro conceptualize the effect of these diseases on human behavior and communication [17].

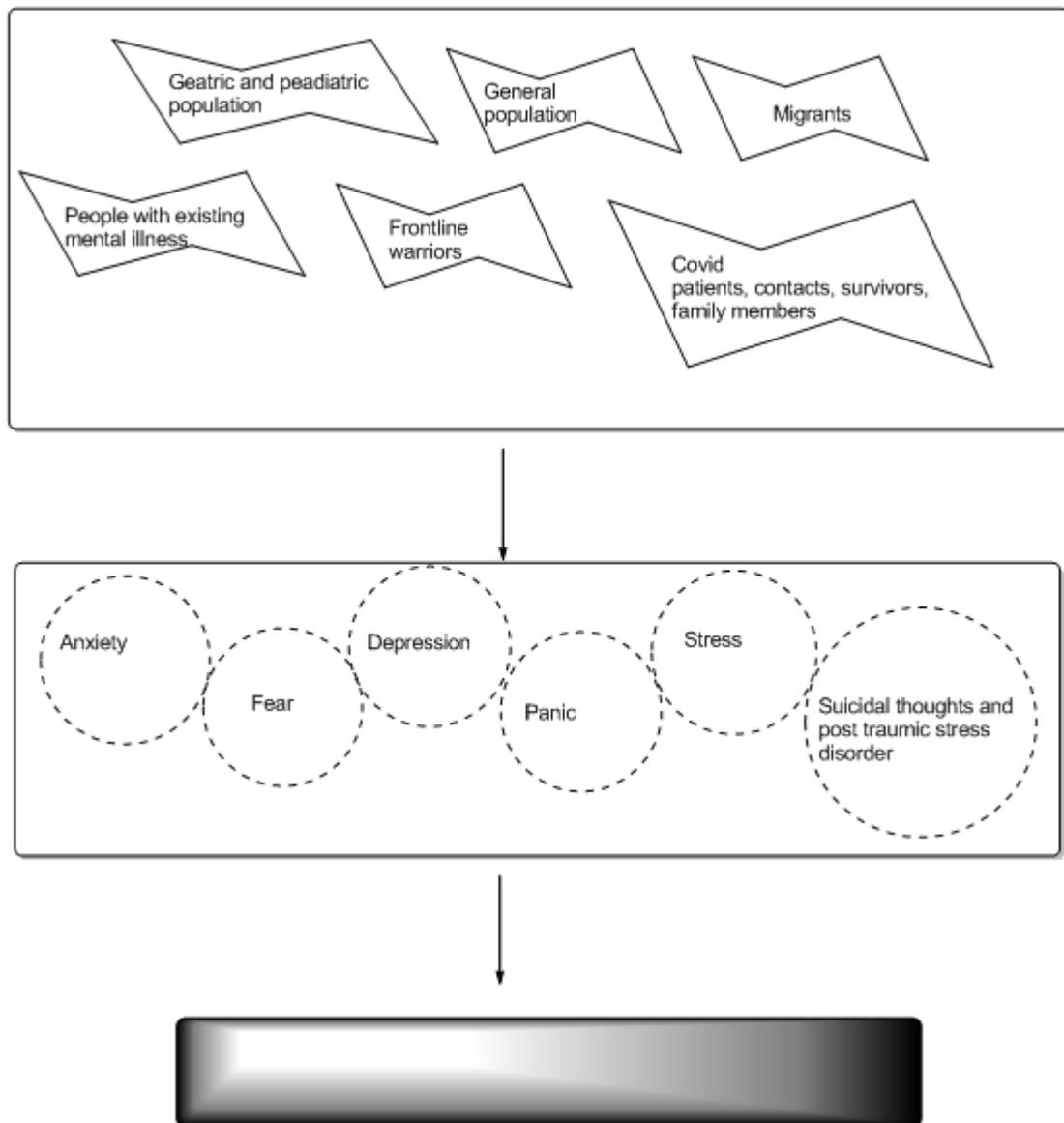


Figure 2: Sources of mental health issues

The disease has instilled distrust in front-line staff, COVID 19 patients, and the general public. In certain nations, the reaction to the pandemic has resulted in full or limited restrictions on travel. The overuse of social media has been exacerbated by the pandemic response's overuse. Fear of illness could harm the population as a whole, and it could worsen the mental health of people who still have mental health problems [18]. The lack of basic care can have a significant effect on older adults, people with mental illnesses, and people with disabilities. As a result of the pandemic reaction, there has been an increase in screen time, as well as social media exposure and limitations. Apart from recognized mental health, there is no moral harm. Moral damage may be caused by disorders like depression or post-traumatic stress

disorder. Moral harm has been described as psychological trauma caused by behavior, and it is a concept that originated with the military that causes someone's moral or ethical code to be violated by acts or inaction [19].

Its generalizability to the general public may be questioned. The paper provides a comprehensive summary of the mental health problems that arose during COVID-19, as well as the answers to them. Based on the insights and information available from India and other nations, it is recommended to have a multi-pronged, multi-staked, multi-spokesman strategy. The study may be seen as a warning about the future of our country's health-care system in the face of a worldwide mental-health pandemic.

Conclusion:

In less-developed nations, several previous attempts to improve mental health have failed over the last six decades or more. Mental health education will serve as both a means and an end to this apathy. There's a good chance that a looming pandemic of latent mental health problems is on the way, with the potential to devastate the existing mental health system. To deal with the effects of the COVID-19, people's mental wellbeing must be addressed along with other methods for managing and controlling the pandemic as a whole. Specialized psychological care, as well as proper and reliable risk and disaster coordination, are all important. Successful coping mechanisms and communication would aid in grappling with the world's mental health issues in this hour of crisis.

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TRANSCENDING DEPRESSION AND ANXIETY SPIRITUALLY: SELF-EFFACING AND PRAGMATIC PROCESS DURING THE COVID-19 PANDEMIC

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Abstract:

Most of the people in this post-modern society were overtired, anxiety ridden and constantly depressed in general and during this COVID-19 Pandemic. These mental disorders hunting the human society for the longer period of time, in spite of many helpful treatments and solutions to the problem, still the people find it difficult to overcome the problem and further it is added fuel due to COVID-19 pandemic. It's persistence at the longer run leads to some other consequences like it may affect his family, performance in education or workplace, etc., In this context, the present paper looks into the nature of the depression and anxiety faced by the individuals in the contemporary world and the treatment/solutions available to the effective means of reducing the depression and anxiety. The treatment/solutions are available in the form of diagnosis /treatment (Material solutions) as well as yoga/meditation (Spiritual solutions). The treatment process from both the perspective (Material as well as Spiritual) gives certain relief to the depressed, however unable to overcome the problem permanently. The chapter discuss the available solutions in details from both the perspective, but the special emphasis given to the spiritual practices especially Bhakti-yoga process by considering it as simple, easiest process, low cost, time and better results.

Keywords: Depression, Anxiety, COVID-19, Diagnosis, Treatment, Bhakti-yoga.

Introduction:

In the Mental Health Atlas 2017, published by the World Health Organisation (WHO) estimated that 792 million¹ people suffer from one or the other form of mental disorder and its associated disease burden. Further, WHO reported that mental disorders such as depression, anxiety and substance use disorders, impose an enormous global disease burden that leads to premature mortality and affects functioning and quality of life. In continuation with this, COVID-

¹Mental Health Atlas 2017, published by World Health Organisation in 2018 accessed from <https://apps.who.int/iris/bitstream/handle/10665/272735/9789241514019-eng.pdf?ua=1>

19 pandemic has negatively affected many people's mental health and created new barriers for people already suffering from mental illness and substance use disorder (Nirmita Panchal et al., (2021). Global ranking on the leading causes of death also shows that in 2000 depression disorder ranked 19th and in 2016 it moved up to 16th rank. It shows that burden of mental disorders continues to grow with significant impacts on health and major social, human rights and economic consequences in all countries of the world². Nevertheless, many of the cases under reported in the case of mental disorder. In this connection, data presented by Institute of Health metrics and Evaluation (IHME) estimated that around 1-in-7 people globally (11-18 percent) have one or more mental or substance use disorders. Mental disorder includes the range of connected disorders such as depression, anxiety, dementia, schizophrenia, and developmental disorders including autism. There are effective strategies and treatments for mental disorder. However, the number of people suffering from mental disorder is increasing. For example, more than one million people commit suicide ever year (the rate of suicide (10.5 per 100000)³ for the year 2019) between ten and twenty million make an attempt to suicide. By considering these statistics, it is need of hour to understand the causes and consequences of mental disorder especially depression and anxiety, and various treatments and its results. Moreover, the chapter focussed on spiritual dimension⁴ of solving the mental disorder, it also touched upon the materialistic dimension⁵ such as psychological therapies.

Mental Disorder: causes and curatives:

Now mental disorder issues become mainstream though we have progressed technologically, it seems that people are overtired, anxiety-ridden and constantly depressed. Among sociologists, this alarming phenomenon referred as anxiety epidemic. Every individual's mental disorder problems have complex specific causes such as alcohol and drug abuse, low self-esteem, social isolation, etc. While addressing these individual causes, we can't afford to

² Disease burden and mortality estimates by World Health Organisation, 2000-2016 https://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html

³ World Health Organization (2018). Global Health Estimates 2016: Deaths by cause, age, sex, by country and by region, 2000-2016. World Health Organization, Geneva. <https://www.who.int/news-room/detail/09-09-2019-suicide-one-person-dies-every-40-seconds>

⁴ The word spiritual dimension refers, the ways and means to achieve anything in this world not by being attached to it. The ultimate source for distress and greediness is attachment to the worldly achievement and possessions. The spiritual practices teaches how to overcome the attachment and greedy in our human life.

⁵ The very word materialistic dimension refers the importance a person attaches to material possessions and the belief that certain possessions are the primary source of happiness. Otherwise, it also referred as value that emphasis to importance of possessions and material goods in person's life toward achieving life goals or desire states (Burroughs and Rindfleisch, 2002).

lose sight of underlying generic causes. The universal cause is deeper and more fundamental than sexuality, deeper than the craving for social power, deeper even than the desire for possessions, there is still more generalised and universal craving in the human make-up. These causes made human being to struggle in the life and finally ended up with mental dissatisfaction which leads to depression and anxiety. The following section overthrew the causes, consequences and therapies for depression and anxiety from materialistic dimension.

Depression:

Most of us have periods when we feel sad, lethargic and uninterested in any activities – even pleasurable once. Mild depressive symptoms are a normal response to man of life's stresses, especially important losses. Depression becomes a disorder when the symptoms become so severe that they interfere with normal functioning and when they continue for weeks at a time. Mostly half of the human population one or the other way in their different life circumstances suffering from severe to mild depressions (Merokangas, 2011) some time in their lives. The prevalence of depression disorder varies considerably across regions and sex, the total number of people living with depression in the world is 322 million. Nearly half of these people live in South-East Asia region and western Pacific Region, reflecting the relatively larger populations of those two regions (which include Indian and China). In most countries, depression is more common among females (5.1%) than males (3.6%). Prevalence varies by region, from a low of 2.06% among males in the Western Pacific Region to 5.9 % females in the African Region⁶.

Although depression is characterised as a mood disorder, it is truly a disorder of the whole person, affecting bodily functions, behaviours, and thoughts as well as emotions. The emotional symptoms of depression are not the everyday blues that we all experience from time to time, but an unrelenting pain and despair. People also report that they have lost the ability to experience joy, even in response to the most joyous occasions, a symptom referred to as anhedonia⁷. The cognitive symptoms consist primarily of negative thoughts, with themes of worthlessness, guilt, hopelessness, and even suicide. Motivation is at a low ebb: the depressed person tends to be passive and has difficulty initiating activities. Depressed people experience

⁶World Health Organisation (2017), Depression and Other Common Mental Disorders Global Health Estimates, World Health Organization, Geneva. <https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf>

⁷They say that they don't find interacting with family or friends, their work, or their hobbies enjoyable anymore.

many physical symptoms. Their appetite many wanes, they may sleep a great deal or very little, they tend to be very fatigued and their energy is drained. Because a depressed person's thoughts are focussed inward rather than toward external events, he or she may magnify minor aches and pains and worry about health. Description of this depression symptoms can be a debilitating disorder. It may last for long time. Treatments normally either drug therapy or psychotherapy (Susan Nolen et. al., 2014). During COVID 19 lockdown, most of the youth, children and migrant workers are in higher level of depression and anxiety.

Furthermore, when a person feels alienated or unloved, it affects the mind⁸. More specially, it activates the neurotransmitters, which then send messages throughout the whole body and consequently cause an attack on the cells and organs in our own bodies. Many diseases actually develop due to mind's frequent attacks on the cells and organs in the body. The mind has just that kind of power. Just by recognising the process of thinking, feeling and willing, we understand how thoughts leads to actions. If we repeatedly maintain certain thoughts in our minds, they will eventually turn into words and then actions. Conversely, when a person feels cared for and loved their physical and psychological immune system actually gets stronger. Love literally heals, protects and gives longevity and a lack of love literally kills.

People suffering from depression offered treatment with a combination of psychotherapy (Cognitive-behavioural and interpersonal therapy)⁹ and medications (antidepressants)¹⁰ proved more effective than single-modality treatment (David Mintz, 2006). Particularly cases with more severe depression, endogenous depression, chronic depression and dysfunctional cognition show more robust and clinically significant responses to combined treatment. Most of the time, this type of treatment goes failure because of the consuming drugs/alcoholism, failure to manage stress, unable to get proper sleep. Sometimes during the medication or therapy it may looks better, once it was stopped, it may aggravate. The treatment may partially effective at relieving the depression or it may cause intolerable side effects.

⁸ Normally this type of depression referred a psychosomatic disease.

⁹ Psychotherapy is a general term for treating depression. It also referred as talk therapy or psychological therapy. It is completely depend upon the mental health professionals to recommend suitable type of therapies according to the different types of therapies.

¹⁰ Most of the antidepressants are safe, however it may leads to increase in suicidal thoughts or behaviour. Those who are taking an antidepressant needs to be watched closely for worsening depression or unusual behaviour.

Anxiety:

Anxiety¹¹ is considered unhealthy when it is out of proportion to the threat the people face and goes on even after the threat has passed. Anxiety disorders include a group of disorders in which anxiety either is the main symptom (generalised anxiety and panic disorders) or is experienced when the individual attempts to control certain maladaptive behaviours (phobic and obsessive-compulsive disorders). There are four types of symptoms of anxiety. First, physiological or somatic symptoms refer those who may feel when facing tough examination. During that time the heart will be racing, there will be perspiring and the muscles tensed. This is the body's natural reaction to a challenging situation – the physiological changes of the fight to flight response prepare the body to fight a threat or to flee from it. Second, cognitive symptoms of anxiety manifest like having heart attack and dying. Third behavioural symptom of anxiety includes frozen condition, unable to move until help arrived, fourth sense of dread and terror that make up the emotional symptoms of anxiety. All of these symptoms can be highly adaptive when we are facing a real threat, such as sabre-toothed tiger in prehistoric times or a burglar today.

Search for happiness is one of the foremost drive for the people in general. Nevertheless, suffering in the form of anxiety driven life become most common, over a period of time, people accustomed to it. The most basic principle of the material existence is anxiety. As soon as the child is born, it cries, later as when it grown up, lament for what it lost and hanker for what it don't have. Even for people those who are having more or wished to be in prosperous life, they are in fear of someone taking it away or somehow losing it. An over cited example in this regard was insecurity or anxiety which was revealed by the dictator Stalin (Birt, 1993). When Stalin saw his close aides getting popular, he killed them one by one; anyone who got close to him would be eventually killed. He was insecure and in anxiety of losing his position. A classic example also cited in this regard that when a young boy pursues the girl of his dreams and after he gets her, he feels insecure. Even though she reciprocates his love, he is constantly gripped with the anxiety of losing her. But at such times, he needs to remember that he did not fall in love either the girl's physical form or her material possession. He fell for the beauty of her soul. So there should be no cause for worry or dependency.

¹¹ Anxiety disorder never manifest to the patients in the pure form, because the rates of co-occurrence with depression are very high (Robinson *et al.*, 2013)

The materialistic way of life is always fearful because at every step there is danger and their life is full of anxieties and fear. Fear for death, possessions, fame, beauty and responsibilities. To overcome from the anxiety disorder, there are treatments and therapies are available. In regard with medications, many antidepressants like escitalopram and fluoxetine can work for anxiety disorder. Low dose antipsychotic drugs and anxiolytics drugs also help to lower the anxiety. Psychotherapy in the form of counselling addresses the emotional responses to mental illness. Cognitive behavioural therapy also teaches how to recognize and change thought patterns and behaviours that trigger deep anxiety or panic. Further many exercise like jogging and biking also recommended helping release brain chemicals that cut stress and improve the mood. However the material consciousness which prevails in every human being on the conception of 'I' and 'Mine' leads to anxiety. In the common course of action everyone thinks the more I have, the more I will be happy. But people forgets that if they fail to fathom that the more they possess, the more they have to work to maintain and sustain that they have in possession. In course of time worries attack us if they lost it. The actual solution is not medicine or therapy, something else which we cannot solve through materialistic dimension.

Spiritual therapies to cope up with depression and anxiety :

In the previous section it was discussed about the nature of mental depression and anxiety. How to overcome these issues through materialistic way? it means by psychological and physiological. In this section, we discuss over the significance of the spiritual therapies to overcome the depression and anxiety. Spirituality usually refers to the experience of the higher and deeper aspects of life. It is beyond our mental speculation and related to matter, spirit and its relationship with God. Spiritualists are open-minded because they are open to higher experience, whatever be the way they get that experience. It is not connected with religion, it talks about the practices through which we can overcome the problems of the life. The Spiritual therapy can create a favourable mental environment for the practice of Bhakti yoga¹². A favourable mental environment generally means a healthy psychology which is balanced and strongly influence by the mode of goodness. To understand further about the spiritual therapies basic understanding about the nature of the material world in which we are currently living and human beings is important.

¹²Bhakti is a Sanskrit word meaning devotion. However, devotion is shown in action or service, the more precise meaning of Bhakti is "service done with devotion to the divine". Bhakti Yoga directs us to awaken our dormant devotion through spiritual practices and also demonstrate out bhakti in every aspects of our lives and in every relationships.

Nature of the Material World and Human being:

The term material world is to mean this world where things are made of matter. Matter includes solids, liquids, gases, radiant energy and space. The every living entity in this world is consist of matter and it is temporary in nature. For example the human being living for some years, animals living for some years, this world exist for some years. As long as one is in the material world there is always the possibility of good and evil because this world is full of duality. The duality of the material world is felt in terms of heat and cold, curses and favors or misery and happiness. In the world of duality, everyone is envious of all others, and death is inevitable due to the dual existence of matter and spirit. Therefore, in this world, to distinguish between good and bad, happiness and distress is meaningless because they are both mental concoctions (Manodharma)¹³. Because everything in this material world is miserable and troublesome, to create an artificial situation and pretend it to be full of happiness is simply illusion. So, the real problem of this material world is full of suffering and miseries (dukhalayam)¹⁴.

The Vedic literatures says about the four basic problems of this world are ultimately the repetition of birth, old age, disease and death. In this material world everyone are in search of happiness, the more people search for happiness, they suffer more. In this process depression and anxiety arises. There is an say by spiritual leaders in olden days that when the king wanted to punish the offenders he take that offender to a very strong, darks and they would push him under the water of the river by holding how down until the offender was just about to die. And then at that point the offender would let him up and then they push him down again. They keep the offender down until he was about to suffocate and then bring him up. In this process, the offender was few seconds up that time he thinks certain relief. That relief is referred as happiness or enjoyment in this material world. Whenever people get relief from the anxieties, frustrations, burdens, agitations of the material world, it is referred as enjoyment or happiness. The basic principle of material world is anxiety. As the child is born, it cries. Later the child grows it lament for things and hanker for what it doesn't have. And even the child got

¹³ In the Sri Caitanya-Caritamrta (Antya lila chapter 4, verse 176))the word Manah-dharma specified which means speculative mental creations. In the material world, conception of good and bad are all mental speculations. Therefore, saying 'This is good' and 'This is bad' is all a mistake.

¹⁴ In Bhagavad-Gita, the Lord Krishna say this material world is a place of miseries and temporary. (dukhalayam ashshvatam (chapter 8, text-15)

everything as per its wish, still the child fear of someone taking it away or somehow losing it. Then major question arises that no one can change that nature of this material world conditions. It is specified in the Bhagavad-Gita that you can't change it but you can transcend it¹⁵.

Bodily concept of Life:

The basic problem associated in this material world is bodily concept of life. This bodily concept of life means sense gratification the process of fulfilling the bodily desires or demands. The human bodies with materialistic consciousness, our desires become polluted with lust, anger, greed and foolishness. The mind, a subtle entity within the body always thinks about means and ways to achieve happiest life by fulfilling the demands of the senses. In this process of achieving happiness, we face lot of troubles which leads to the conception of 'I' and 'Mine' which causes depression and anxiety. People always think to acquire more and more to lead to a happy life, ultimately ending with depression and anxiety. Many examples can be taken in the history of Indian Politicians; they acquired lot of money by the means of corruption, ultimately, they unable to protect the money accumulated due to CBI investigations, disease and ultimately death. It is not happening only with politicians, with every individual to some extent greedy. The amount and things of greediness differs. The question here it arises how to transcend the bodily concept of life.

Transcending the bodily concept of life:

The Spiritual life begins, when we understand that we are not his body, we are eternal spirit soul trapped in this body. How to understand from an intellectual point of view is big question mark. Soul is eternal and made of spirit, which is spiritual in nature. A body without a soul is called "dead body". According to the Bhagavad-Gita, the human body consists of three aspects, soul, subtle body and gross body¹⁶. The subtle body consists of mind, intelligence and false ego which is existing within our body. The gross body or physical body or material body consists of five elements like earth, water, air, fire and ether. Both the subtle and material bodies are coverings over our real spiritual body.

¹⁵ refer the chapter 8, text 15 (napnuvanti mahatmanah samsiddhim paramam gatah)

¹⁶Earth, water, fire, air, ether (gross elements), mind, intelligence and false ego (subtle elements) – all together constitute my inferior (material) energy (Bhagavad-Gita, chapter 7, text-4) Besides the material elements in the human body, there is a superior element within is spirit soul in all beings (Bhagavad-Gita, chapter 7, text-5). Further in 13th chapter, 34th text, it was said that as sun illuminates all over the universe, the soul, one within the body illuminates the entire body by consciousness.

A good way of understanding the material body is the analogy of motor car. Motor car is a machine made of material energy and the driver required for the car to carry us to the places we want to visit. It also has some demands like supplying the fuel, maintenance, cleaning, etc. With the motor car we understand that we are not the motor car, but that the car is a machine and we can use it for our benefit. The material body is also a machine made of material energy¹⁷. The presence of soul within the body makes it conscious, by the medium of senses bodily demands were fulfilled. For example, the human body needs some food, sleep, sex and defending from dangerous things. But these are the needs of the body not the spirit soul. Its needs are different from the needs of the body.

Again, the same analogy, we maintain the car, by regularly servicing, cleaning, supply it with required fuel; similarly, our human bodies need to supply required things for maintenance, like food, sleep, bathing, etc. but as the fuel and oil are not the food of the driver of the car. The needs or demands of the body are not the needs of the spirit soul, the driver of the body. The whole world is going on under the misconception of the bodily concept of life. Practically everyone is misidentifying himself with his body and is thinking that if he can satisfy the senses of the body, he will be happy. But his is not successful for anyone. All our attempts to become happy by satisfying the senses of our body are doomed to failure and suffering from depression and anxiety because we are not this material body. The soul needs spiritual food, spiritual satisfaction. The human body affords us the opportunity to perform spiritual activities that will free us from getting further material bodies, which are by nature full of suffering.

Spiritual therapies:

When we engage our self in genuine spiritual practices, we automatically relish spiritual bliss. It is the link between the soul and the Supreme Being. The process of linking the soul with the Supreme Being are varied (normally it refers Yoga)¹⁸. The Bhagavad-Gita, the core spiritual text of India describes the variety of yoga process such as jnana yoga, karma yoga, ashtanga/raja yoga and bhakti yoga. Karma yoga (the selfless action) refers the unreserved dedication of all activities to serve the Supreme Being¹⁹. We need to perform our action for the

¹⁷ “... all living beings, are seated as on a machine made of the material energy” (Bhagavad-Gita, chapter 18, text-61)

¹⁸ The word “yoga” comes from the Sanskrit root Yuj which means to link up with, or combine, generally it refers that to link ourselves with the god.

¹⁹ “Therefore, without being attached to the fruits of activities, one should act as a matter of duty, for by working without attachment one attains the Supreme.” (Bhagavad-gita, chapter-3, text-19)

satisfaction of the Supreme Being, otherwise we will bound by the action (it leads to attachment and our desires become polluted with lust, anger, greed and foolishness). Then jnana yoga (philosophical research and wisdom)²⁰ promotes knowledge through seclusion, study and sense abnegation. It leads our life simple and minimised needs to become free from sensual desires that delude the soul. Ashtanga/Raja yoga (physical exercises and meditation)²¹ it is a process of eight distinct and essential stages based on the yoga sutras of the sage Patanjali to achieve the highest perfection to keep the mind fixed on God. The last one is bhakti yoga (the path of devotional service)²² the selfless service to the Supreme God. By the way of reciting his name, discussing his past-times and qualities, worshiping his forms, visiting holy places, taking the shelter of Guru (for guiding ourselves in the right path without any deviation), reading the scriptures like Bhagavad-gita, Srimad Bhagavatam, Ramyanam, Mahabharatham, etc., all refers to the various activities of the bhakti- yoga. In this present age (kali Yuga)²³, the most recommended path is bhakti yoga it is simple and most effective process. Therefore, every individual has to engage himself (either in individual or in group) into the spiritual practices to regain our spiritual consciousness is the ultimate solution for the problem of anxiety and depression.

The efficacy of Bhakti yoga as a form of treatment for depression and anxiety:

Considering the different yoga process described above, now this section focusses ultimately by practising of bhakti yoga how one can be relived from depression and anxiety. Naturally everyone has love or bhakti within our self. That is the reason we love our family, children, occupation, natural environment, etc. Nevertheless, it is in dormant state. Bhakti yoga is a simple way to awaken this dormant loving service to the God. This process laid down by the Supreme Lord in Bhagavad-Gita. The process of awakening love is not just purifying oneself but also fully satisfying the soul and body. This purification process consists of variety of activities. These include mantra meditation or chanting the names of the Lord as

²⁰“In this world, there is nothing so sublime and pure as spiritual knowledge, which is the mature fruit of all mysticism. One who has become accomplished in the practice of yoga enjoys this knowledge within himself in due course of time.” (Bhagavad-gita, chapter-4, text-38)

²¹“To practice *astanga-yoga*, one should go to a secluded place and should lay *kusha* grass on the ground and then cover it with a deerskin and a soft cloth. The seat should be neither too high nor too low and should be situated in a sacred place. The yogi should then sit on it very firmly and practice yoga to purify the heart by controlling his mind, senses and activities and fixing the mind on one point.” (Bhagavad-gita, chapter-6, text-11 &12)

²²“If one offers Me with love and devotion a leaf, a flower, fruit or water, I will accept it.” (Bhagavad-gita, chapter-9, text- 23)

²³ The people will suffer greatly from cold, wind, heat, rain and show. They will be further tormented by quarrels, hunger, thirst, disease and sever anxiety (Srimad Bhagavatam, canto-7, chapter -2, text-10.)

directed by the religious guideline of all the religion. The study of sacred texts such as Bhagavad-Gita, Srimad Bhagavatam, associating with like-minded spiritual aspirants, eating sanctified vegetarian food and living in a way that upholds the principles of truthfulness, austerity, mercy and cleanliness are all core practice for a life of follower of bhakti yoga.

Chanting the pure holy name of the Lord (every religion prescribes certain names to be chanted to link ourselves to the God) as specified in the kali santarna Upanishad.

Harer nama harer nama hare namaiva kevalam

Kalua nastyeva nastyeva nastyeva gatir anyatha

“In this age of quarrel and hypocrisy (kali yuga) the only means of deliverance is the chanting of the holy names of the lord. There is no other way, there is no other way, and there is no other way”

Further it was quoted in Srimad Bhagavatam²⁴, “My dear king, although kali Yuga is an ocean of faults, there is still one good quality about this age: simply by chanting the Hare Krishna maha-mantra, he can become free from material bondage and be promoted to the transcendental kingdom.

A mantra is a spiritual sound vibration that purifies the heart and awakens love of God. The transcendental sound vibration of the holy name awakens the individual being from the dormant stage to the pure consciousness. There are many mantras, but of all, the Hare Krishna mahamantra is particularly recommended as a means of devlernance for this age of kali Yuga.

Hare krishna hare krishna krishna krishna hare hare

Hare rama hare rama rama rama hare hare

Iti sodasakam namnam kali-kalmasa-nasanam

Natah parataropayah sarva vedsu drsyate

“The sixteen words of the Hare Krishna maha mantra are expecially meant for counteracting the sins of age of kali. To save oneself from the contamination of this age there is no alternative but to chant the Hare Krishna Mahamantra. After searching through all the Vedic literature, one cannot find a method of religion more sublime for their age than the chanting of Hare Krishna²⁵.

²⁴ Twelfth canto, 3rd chapter, text – 51.

²⁵ The text and its translation from Kali-santarana Upanishad (5- 6)

By chanting the mantra “*Hare Krishna Hare Krishna Krishna Krishna Hare Hare Hare Rama Hare Rama Hare Hare*” the consciousness of the living being get purified, controlled²⁶ and regulated. Chanting is a spiritual call for the lord and his energy to give protection from the material elements to the individual soul. The ways to chant is with attention and focus, to listen carefully to the sound vibration. Hushing the chat of the intellectual mind (normally during the mantra meditation the mind wanders, here and there) makes one to develop deeper understanding and realisations about many aspects of life.

Reading the Vedic scriptures are essential in our life, for example, Bhagavad-Gita ancient Hindu sacred literature gives one about the knowledge of the ways to come out of the material existence. The problems of the mind²⁷, nature of the material world and actions which binds us in the material world are explained in Bhagavad-Gita. By reading, we gain knowledge, so we can avoid the actions which are binds us in the material world or which are leading us for suffering. The system of yoga, as Krishna explains in Bhagavad-Gita is meant to help quiet the mind’s constant chatter and bring it back under the control of the self (soul). When the mind is controlled by superior, spiritual direction, it can be our best friend and help lead us to our life’s perfection ultimately, we can overcome from depression and anxiety.

Performing daily routine, not to fulfil our own sense gratification, but for the gratification of the supreme lord. The ultimate principal in the bhakti yoga is ‘nothing in this world is belonging to us; everything is belonging to the Supreme God’. Then where is the problem of possession of things and suffering for losing it comes, identify ourselves to this material world. The Supreme God is facilitating us to use all those things in this world but in the regulated way, this regulated way of using the material aspects is referred as Bhakti yoga process. For example, everyone in this universe, for their survival have to take food. But people prepare and eat directly. The bhakti yoga process recommends, whatever you want to eat (highly recommended vegetarian food stuff) offer it to the Supreme Lord and then consume it. It is referred as Sanctified food (Prasadh), in this way our sense is regulated and cooking activity becomes spiritualised. Further, daily offering flowers to the Supreme Lord, whenever you meet people instead of saying good morning, we can say Hare Krishna or Radhe Radhe²⁸. In

²⁶ For him who has conquered the mind, the mind is the best of friends; but for one who has failed to do so, his mind will remain the greatest enemy." Bhagavad-Gita, chapter 6, Text - 6

²⁷ From wherever the mind wanders due to its flickering and unsteady nature, one must certainly withdraw it and bring it back under the control of the self." Bhagavad-Gita, chapter 6, Text - 26

²⁸ In the town of Mathura, India - everyone while greeting or meeting each other, they use to say Radhe Radhe.

this way by engaging each and every action of ours in the spiritual way, we can transcend the lamentation due to failure, tedious life, anger, separation, etc., If we practice Bhakti-yoga process, these things (failure, tedious life, anger, separation) will happen, but we look our life from different perspective. By the way of Mantra meditation, our concentration in performing the task and patients will improve. It is a tool for focusing the mind to develop calmness and clarity in life. It cuts the knot of negative thinking process dwell in the mind and to clear the cloudiness to reach clarity in one's consciousness.

Conclusion:

The perfect solution to solve the chronic diseases of depression and anxiety is in the practice of bhakti yoga. In the Vedic scriptures, the sadhana bhakti (daily regular practice) prescribes chanting of Hare Krishna maha mantra, reading of Bhagavad-gita, honouring prasadam (vegetarian food offered to the Lord) is described more as a component of a spiritual lifestyle than as a therapeutic intervention (Goswami, 1977). The recent research conducted by Wolf (2019) also revealed that persons who have been regularly chanting the Hare Krishna maha mantra for the years easily can cope up with depression and anxiety. This process leads to the attachment to the Lord and gives us higher taste; and while helping us transcend the petty material causes of depression and anxiety and also helps us perform our daily routine duties properly. Sincere practice of bhakti yoga convinces a practitioner that only connection to god (the food for soul) can give tangible happiness in life.

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PANDEMIC THREATS TO HUMAN AND SOLUTION BY MEDICINAL PLANTS

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Abstract:

“Prevention is better than Cure”

People all over the world have been affected by coronavirus disease 2019 (COVID-19), which is the fifth pandemic after the 1918 flu pandemic. As the outbreak continued to spread out at a remarkable pace, the World Health Organization (WHO) had to declare it a pandemic on March 11, 2020. SARS-CoV-2 is the seventh coronavirus to infect humans and the causative agent for COVID-19. There are two reasons that Covid-19 is such a threat. First, it can kill healthy adults in addition to elderly people with existing health problems. Second, Covid-19 disease is transmitted very easily. An average infected person spreads the disease to two or three others — an exponential rate of infection. To control the pandemic, Mask, social distancing, sanitization, washing hands, Vaccine, are crucial but inner strength to fight covid-19 and a strong immune system is also required, which can be maintained by a balanced diet and immunity-boosting medicinal plants.

Keywords: Covid -19, Pandemic, Immunity, Medicinal Plants.

Introduction:

The novel coronavirus disease (COVID-19) has spread over the globe infecting more than 2 million people from December 2019 which lead to more than 100 thousand deaths so far. Individuals who suffering from infectious and non-infectious diseases including diabetes, hypertension, and kidney disorder are considered at high risk for this viral infection due to lowered immunity [1]. The coronavirus that led to the COVID-19 pandemic is similar to the pathogen SARS-CoV (a viral respiratory disease of zoonotic origin) that caused the epidemic of 2003. The prevention and treatment are component and parcel of the combat in opposition to any infectious and disease-inflicting agent. Despite the development of cutting-edge clinical information and skills, the contemporary-day pandemic state of affairs because of COVID-19 has reiterated the significance of the age-antique conventional healing device primarily based

totally on medicinal flora as an opportunity approach to deal with and treatment numerous diseases. The Indian conventional device especially 'Ayurveda' has performed an critical and critical position in supplying fitness care to human civilization. India has the specific difference of its personal diagnosed conventional medicine; Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSHA). Our have a look at is targeted on immunity-boosting flora.

Method:

The first method is washing hands frequently with soap because most of the external agents that cause damage to the human body enter through either the lungs or gastrointestinal tract. With the crisis of the COVID-19 pandemic, it is time to take extra care and to enhance immunity by maintaining hand hygiene. The first and foremost step is to stay away from any kind of infection, be that viral, bacterial, or fungal infection, as actively as once can. Coronaviruses have an external envelope that is made up of lipids which are fatty organic molecules. Hence, maintaining good hand hygiene is the very first step in staying safe from the virus. Washing hands regularly with soap can dissolve the outer fatty envelope of the virus and can destroy the core of the virus and its genome (RNA). The other most important aspect of the present Covid-19 prevention and treatment is the strengthening of the immune system of the body. When the immunity is nicely advanced in the frame, the disease-combating dealers known as antibodies also are geared up to cope with any dangerous overseas detail that the frame would possibly encounter. Antibodies are produced via complicated biochemical and physiological processes. The Ministry of AYUSH advocated using a decoction of the aggregate of *Ocimum tenuiflorum*, *Cinnamomum Verum*, *Piper nigrum*, *Zingiber officinale*, and *Vitis vinifera* as a safety measure with the aid of using boosting the immunity towards the severity of contamination due to a unique coronavirus. Natural tea and golden milk method is supposed as an immune booster towards COVID-19, because Turmeric incorporates Curcumin a phytochemical which could lessen pollution from the frame and support the immune gadget to combat off bacteria, viruses and germs.

Discussion:

In recent years, based on leads from the Ayurvedic system and other traditional medicine systems, several immunity boosting antiviral agents have been extracted from plants. These agents include a variety of polyphenols, saponins, glucosides, flavonoids, and alkaloids. Some of the traditional Indian spices and herbs are given below, which are energy and immunity boosters and they prepare the body to fight variety of infections. Some essential medicinal plants in Ayurveda enhance immunity for fighting Covid-19 Pandemic.

1. Holy Basil, Tulsi (*Ocimum sanctum*):



Tulsi is the primary form used for its medicinal purposes, due to its anti-infective properties and its use in respiratory tract infections like cough, cold, sore throat, asthma, etc. It removes excess Kapha from the lungs. This natural stimulant energizes the human body, increases blood circulation, and has proven to be very effective for skin diseases and ulcers. It has to purify properties that help in fighting respiratory diseases, fever, and any kind of infections by building one's natural immunity. Fresh tulsi juice, when taken twice a day, may help to boost general health. Adding a few drops of ginger extract and honey to the tulsi juice may help further in improving immunity.

2. Ginger – Aadrak (*Zingiber officinalis*):



Ginger, (known as Aadrak or Shunti), is also known as Vishwa-Aushadh in Ayurveda, the Rasayana that is helps with many bodily disorders and hence is considered one of the best immunity boosters in Ayurveda. Before lunch, one can have an inch-long slice of Ginger with a pinch of rock salt, this helps in cleansing the palate and stimulates appetite. Also, this combination is a well-known and effective antidote to Nausea. Ginger is also recommended for many respiratory ailments like cold, cough, pneumonia, asthma, and bronchitis.

3. Giloy (*Tinospora Cordifolia*):



Giloy is an herb that helps in boosting our immunity. It can act as a powerhouse of antioxidants that fight free radicals, it keeps the cells healthy and disease free. Giloy helps in toxin removal, blood purification, and also combats liver diseases and even urinary tract infections. "Giloy is used by experts for treating heart-related conditions and is also found useful for treating infertility, chronic fever, improve digestion, treat diabetes, reduce stress and anxiety, anti-inflammatory anti-arthritic.

4. Amala Indian gooseberry (*Emblica officinalis*):



Amla, Amalaki, or Indian Gooseberry has proven to be a highly potent medicinal plant due to its innumerable healing properties. Vitamin C may help bolster the immune system by promoting the proliferation of phagocytes, which are specialized immune cells that help swallow up harmful invaders. Amla is useful in ulcer

prevention, for diabetic patients, and memory effects. Amla syrup has a hematinic and lipolytic function and that has proven to be effective in scurvy, relieves indigestion and acidity. Additionally, it is a natural anti-aging agent and can be useful with skin, hair, vision, cancer and heart problems.

5. Garlic or Lahsoon (*Allium sativum*):



Garlic herb has significant curative and medicinal properties as it exhibits antibacterial and antiseptic nature. These properties are a result of a compound present in garlic, Allicin. It is rich in minerals like zinc, potassium, phosphorus, and magnesium. Other elements like Vitamins C, K, Folate, niacin, and thiamine are also found abundantly in Garlic. It cures wards off cough and cold, boosts immunity and moreover protects against free radicals and prevents damage to the DNA. Zinc in garlic contributes in immunity. Vitamin C helps our immune system in fighting off infections. Due to its antimicrobial properties is very beneficial against eye and ear infections. It is good for cardiac health, improves brain functioning, improves digestion, balances blood sugar, prevents cancer, peptic ulcer. Also it is good for weight loss.

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COMPARISON OF AYURVEDA AND ALLOPATHY

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Abstract:

According to World's Health Organization estimate that about 80% of population appearing in emerging countries still relies on conventional medication based largely on species of plant life and organisms for their primary health care¹. Ayurveda is oldest herbal practice to treat many chronic diseases. Ayurveda is an all-inclusive scientific technique of medication progressed in India. Originally it was developed through ancient prudence, clinical practices and investigation in scientific manner. The term "Ayurveda" meaning 'knowledge of life' involves of two Sanskrit words viz. 'Aayu' signifying 'Life' and 'Veda' indicating 'Knowledge'. "Chikitsa" is not simply healing the diseases; it also keeps strength in healthy condition and healing the disease relating to materially, psychologically and spiritual. Western medicine is too recognized as Modern-day Medicine or Allopathic Medicines. Allopathic is the term originated from a Greek source where allopathic implies- which brings different impacts not linked with the pathology of the various disease. Which has made a "conventional system of medicine", allopathic is a disease maintenance procedure and its role is only to control the disease.

Keywords: Allopathy, Ayurvedic, Medicine, synthetic drug.

Introduction:

Ayurveda is the "Knowledge of the Fortunetellers". It was established by the sages and prophets who lived their life time in mound tops, vales, dense jungles and isolated areas where ordinary human being could not even walk in. They were always believed around the kindness of manhood. They were preceded in pursuit of medicinal plants, seeds and fruits which could be alleviate each of the illness the ordinary human being. Without any scientist to conduct experiment by using chemicals, these fortune tellers with their in-depth knowledge in Ayurveda discovered such a plants, seeds and fruits which could cure any disease permanently.

Genuinely, all these herbal therapies were believed Blessing! The god send of Ayurveda is that it detects the root of cause of diseases.

Meanwhile in this modern era; allopathic medicines have been scattered its arms into competence and improvement in the direction of every single disease is described on our planet. With the never-ending involvement of researchers-experts, this form of medications has been an away for every individual's alternative medical circumstances. Numerous factors and harsh chemicals are operated on produce the best out of it and then the medicine is produced. Allopathic medicines were with its strong effect from such harsh chemicals is like to say have instinctive effect on the victim in no time, alleviatingus from the suffering^{16, 22}.

Aim:

To study *Ayurveda* and *Allopathy* treatments in modern era comparatively

Objectives:

We know that Nature always remains as a gilded mark to demonstrate the exceptional occurrences of synergy. Various natural products from medicinal plant, animals and minerals have been the beginning of the therapy of human disease¹.

Plants and other natural products have been in use for the human suffering from time immemorial, the search for new chemical entities obtained by screening natural sources such as plant extract and its phytoconstituents. Human being presence on this earth planet has been possible only for the reason that of the very important role played by plant kingdom. Nature always play vital role to develop the exceptional phenomenon of symbiosis. Medicinal plants present even before mankind made their arrival on the earth². Old-style medicine using ayurvedically herbal drugs occurs in each component of globe. The major areas are Indian, Chinese and European conventional system. In point of belief of the evolution of modern or European medication not only new artificial medicines have been comply with the world-wide conditions on value, protection and effectiveness. Herbal medications have advantages of human being presented for patient role in the ecological region of the particular conventional drug. The total expansion process of ayurvedic herbal medications for worldwide consumption holds to be separate since that of artificial drugs³.

Basically every countryside creates its separate medicinal method, which contains the prehistoric evolution of country like China, Egypt, India etc. Therefore, Indian medicinal system – Ayurveda occurred addicted to presence. The use of herbal medicinal plants was assembled in Ayurveda which were registered more than about 8000 herbal treatments. Ancient ayurvedic herbal medications were generally found from plant sources in the type of crude drugs such as dried out herbal powder or their extracts or mixture of products⁴. Siddha and Unani also

traditional health care system have been prospering for many eras. Apart from these medicinal systems, there is a rich tradition of ethno-botanical applications of herbs by various vibrant ancestral populations in the country⁵.

The Siddha system of medicine uses around 600, Ayurveda 700, Unani 700 and modern medicine about 30 plant species⁶. Ethno-medicinal knowledge exists in India from ancient time. India is one of the world's 12 prominent biodiversity hotspots. India has about 45000 plant different genus; therapeutic assets have been allocated to numerous thousand about 18000-20000 frequently in the literature; Ayurvedic medicinal system has been received less official help and hence less attention from excellent medicinal consultants and scientists. Considerable effort was done on the chemistry, botany, pharmacognosy and ergonomics of herbal drugs.

Statistical techniques are being utilized to assess the integrity of allegations. Certain recent work in drug development relates 203 plants for evaluation. Less well known ethno medicines have been used for treatment of intestine, joint, liver and skin diseases⁷. Routine random efforts are not likely to increase the desired success rate discovery of herbal drugs. The new modified compilation procedure suggests the top opportunities for the innovation in herbal drugs and expansion of herbal crude agents for treatment of cancer and AIDS⁸ if search and collection are based on biodiversity or ethnomedicinal value later date in herbarium environment⁹. At ancient time in India veda like Rigveda, which one of oldest sources of humanoid awareness transcribed among 4500-1500 B.C. references the usage of 67-68 medicinal shrubs for the healing resolutions and Yajurveda in between 1300-1400 B.C. enlists 80-81 florae but Atharva-veda transcribed where 1200 B.C. describes 280-290 plants¹⁰. India has been occupying the leading most point in the consumption of herbal medications in the globe. Out of 75000 medicinal species only about 1 % of medicinal plants are recognized though scientific studies to have medicinal value when used in form of extract by human¹¹.

Many medicinal plants produce inexpensively vital organic-medicinal compounds such as tannins, oils resins, gums natural rubber, dyes, waxes, flavors and pharmaceuticals. But medicinal plants have not once been explained, very much less evaluated for biologically active constituents and new wells of commercially useful materials go on to be detected.

A latest study discovered that about 60% of anti-infective and antitumor agents that remain commercially and some are at medical enhancement begin on or after natural sources¹². Most recently new compound generation and drug discovery processes have been significantly influenced by emerging approaches of advanced genomic combinational chemistry and computer assisted drug design¹³.

Table 1: Brief study of the points where *Ayurveda* and *Allopathy* differs from each other^{16,18-22}

Points	Allopathy	Ayurveda
Side Effects	The name and its derivation suggest that, this is a system of side effects.	Completely natural, so there is no issue of the side effects.
Approach	Holistic approach is absent	Aims at holistic approach
Evidence	Considered as evidence-based system of medicine- but not that true. The way allopathic physicians launch and withdraws medicines it never seems to be an evidence-based system of medicines.	When Ayurveda follows the nature it directly means that it is following some natural wisdom and a universal truth, which need not to be launch and withdraw. This is the reason Ayurveda Scholars have highlighted on the theory that Ayurvedic treatment has no ending and not any opening even— no introduction and no retreat.
Wholesomeness	Believe to substitute of the organs in name of behavior, not much nervous about the THERAPY.	For Ayurveda well-being is a whole bundle, not a spread issue.
Natural	They believe in chemicals and artificial things on your own.	Near adhere to the natural world is the only way to get the entire well-being.
Therapeutic Level	On therapeutic level, modern day sciences seem to be confused for most of the time. These talk about the treatments and management but not ever suppose about the TREAT and RESTORE.	In Ayurveda believes Cure of a disease as the only way to go for the basic therapies. Corresponding to Ayurveda there cannot be less than the Cure in a health science.
Root	Modern medical knowledge not ever recognize suppressing the signs and symptoms alone- not concerned with the basic Reason of a disease.	But Ayurveda knows the root reason initial and then utilizes the identical to root out the disease from the human body, this is the cause. Ayurveda realizes the comprehensive well-being and a state of remedy and back to normality especially simply.
Diet and Lifestyle	Modern-day sciences are not ever effective against the diseases neither in treating these totally nor in avoiding these.	Ayurveda is all regarding how to living- life. So, diet and routine life are main matters of Ayurveda.
	It is assessed on animals to confirm its effectiveness. The effect of chemicals can lead to ineffectiveness and irretrievable crossing together on the human being and animals. Extremely few impacts can be reversed to normal.	Oppositely it is not checked on animals for its impact and act. Since it is all natural, it does not bring huge amounts of harm to the human kind.
	Has cure to most of the diseases, while other life killing diseases are still under re- search to obtain the right medicine.	Has therapy to nearly every single disease consistently

Specific consideration is compensated to the current role of natural drugs therapy; as naturally effective medicinal compounds such as opening materials for artificial or modern medications and as source of models for synthesis of new drugs with better chemical, therapeutic than original compounds¹⁴. Sharangdhara's statement "*rasayanam cha tajghyeyam yajjara vyadhi vinashanam*" is more apt for its description of the use of *Rasayanas* in *Jaravyadhi* (progeria), *Jara* (aging) and *Vyadhi* (disease)^{16,18,20}. Drugs of each and every traditional medicine, like Ayurveda, Siddha, and Unanined need to be tested and validated scientifically. Council for Scientific and Industrial research (CSIR), New Delhi, is already involved in this field and validated about 350 formulations for different activities. This is better trend since it attempts to various traditional practice with modern knowledge for the important health^{17, 21}.

Conclusion:

The very core of *Ayurveda* is formed from some very basic concepts e.g. *panchabhautic* theory, the *prakriti* concept which is used to describe the tendency to and projection of disease as well as governs the choice of the therapy, balance and imbalance of the three *dosha* (*vata*, *pitta* and *kapha*) in the development of disease. Interestingly, *Ayurveda* further expands on these theories to plan intervention that would correct the imbalance. The activities of medications are explained out of their numerous properties like *rasa*, *guna*, *veerya*, *vipaka*, and *prabhava* based fundamentally on their essential alignment. It is the basic requirement of the period to use modern-day expertise to discover the importance of these theories, so that they may be construed in light of higher to date systematic linguistic to bargain modern-day health care.

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EFFECT OF COVID-19 PANDEMIC ON DIETARY STATUS AMONG COLLEGE STUDENTS

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Abstract:

Food plays an important place in one's life. Without food one body can live. It nourishes and gives health to the body whenever the body need charge. Mostly people of all age group may feed on good food, while children and old aged people finds special needs in the area of nutrition. The same thing happens in college students as well as school students too. They have the habits of skipping breakfast and choosing processed food. In this research an online survey were conducted to the students during lock down time to collect information regarding diet practices, food preferences and changing in food selection. Around 86 student participants from Kerala and Tamil Nadu were chosen and data were recorded.

Keywords: Covid-19 Pandemic, Dietary Status, College Students, Food Preference.

Introduction:

The sudden outbreak of deadly diseases called covid-19 caused by a corona virus (SARS-COV-2) shock the entire world. The world health organization declared it as a pandemic. The situation challenged the education system across the world and forced educators to shift to an online mode of teaching overnight (Dhawan, 2020). Yilmaz *et al.*, (2020) has reported in his study that Covid-19 pandemic has significantly changes in the eating habits and purchasing behaviour of college students. Sutaria M *et al.*, (2020) has observed in the study that nearly 30.18% skipped at least one meal, 50.2% changed their eating schedule, 72% snacking between meals and 52.6% showed increased in weight. Ramaswamy *et al.*,

(2020) in his study found out that weight gaining issue during pandemic was observed in several people, where 33% lose weight during pandemic and only 11% gained weight.

In the light of the above mentioned facts certain objectives were formulated as follows:

1. To know the socio demographic profile of the students
2. To collect details of preference of study
3. To know about the life style changes of students during covid-19 pandemic
4. To know about the physical activity of students during covid-19 pandemic
5. To know about the dietary preferences during lock down
6. To know about the changes in food selection during pandemic

Methodology:

Selection of the subjects

Samples of 86 students from various colleges from Tamil Nadu and Kerala were selected for the study. Consent was taken from them to participate in the study through online platform (Google forms) and they were instructed that the data will be published in book or in online.

Formulation of the tool

Well framed questionnaires were formulated to collect the details from the respondents. Questionnaire was divided in to five parts. The first part of the questionnaire was to know about the socio demographic details regarding age, sex, place of residence, state of residence and type of family. The second part of the questionnaire carries questions on details regarding education. The third part of the questionnaire included questions on the life style habits during lock down, watching TV, smoking, consumption of alcoholic beverages, and chewing betel leaves. The fourth part of the questionnaire contains physical activity of the students during lock down. The fifth part of the questionnaire contains dietary preferences during lock down. The sixth part of the questionnaire contains changes in food selection during lock down.

Analysis of the data

The collected data were percentage analyzed.

Results and Discussion:

Demographic profile of the students

From the table no 1, it is clearly understood that nearly 8.1 % of the students belong to the age group of 18-19 Years followed by, 30.2 % of the students belong to the age group of 19-20 Years, 44.2 % of the students belong to the age group of 20-21Years, 12.8 % of the

students belong to the age group of 21-22 Years, 3.5 % of the students belong to the age group of 22-23 Years and 1.2 % of the students belong to the age group of 23-24 Years.

Table 1: Demographic Profile of the Students

I	S.No	Age of the students	N=86	Percent
	1	18-19	07	8.1%
	2	19-20	26	30.2%
	3	20-21	38	44.2%
	4	21-22	11	12.8%
	5	22-23	03	3.5%
	6	23-24	01	1.2%
	Total		86	100
II	S.No	Sex	N=86	Percent
	1	Male	22	25.6%
	2	Female	64	74.4%
	Total		86	100
III	S.No	Place of Residence	N=86	Percent
	1	Village	18	20.9%
	2	City	40	46.5%
	3	Town	28	32.6%
	Total		86	100
IV	S.No	State of Residence	N=86	Percent
	1	Tamil Nadu	72	83.7%
	2	Kerala	14	16.3%
	Total		86	100
V	S.No	Type of Family	N=86	Percent
	1	Nuclear	70	81.4%
	2	Joint	16	18.6%
	Total		86	100

N denotes the Total number of students

With respect to sex, 74.4 % of the students were female participants and 25.6 % were male participants. Among the place of residence analyzed 20.9 % of the students hail from village, 32.6 % belong to town and the rest 46.5 % of students come from city. About 83.7% of

students belong to Kerala state and 16.3 % belong to Tamil Nadu. Nearly 81.4 % of students belong to nuclear family and 18.6 % belongs to joint family

Students from remote area and disadvantaged areas primarily faced enormous challenges such as technological accessibility, poor internet facilities connectivity and harsh study environment (Alsoud and Harasis, 2021).

Preference of studying during covid -19 pandemic

Hours of study during lockdown

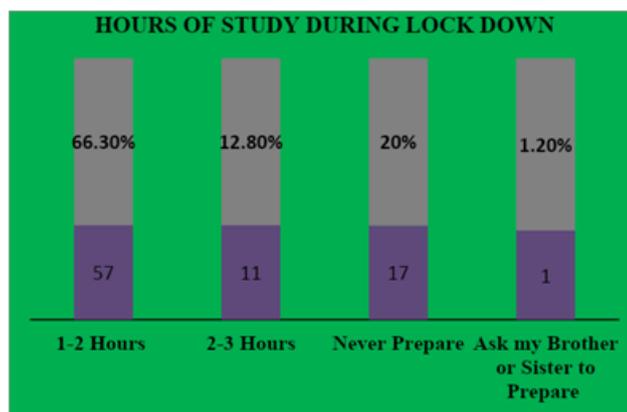


Figure 1: Hours of study during lock down

From fig no 1, it is clearly stated that 66.3% of the students admitted that they used to spend 1-2 hours to prepare for the study after online class, 12.8 % of the students admitted that they used to spend 2-3 hours to prepare for the study after online, 20% of the students never spend time to prepare for the study and the remaining 1.2% of them ask their brother or sister to make notes for them to study

Reading books during lock down

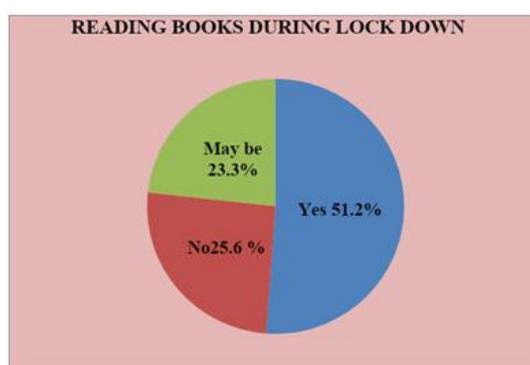


Figure 2: Reading books during lock down

It is clearly evident from the fig no 2 that 51.2% of the students read books during lock down, 25.6% of the students do not have the habit of reading books during lock down and the rest of the students 23.3% reported that they may read books during lock down.

Preparations for exams during lock down

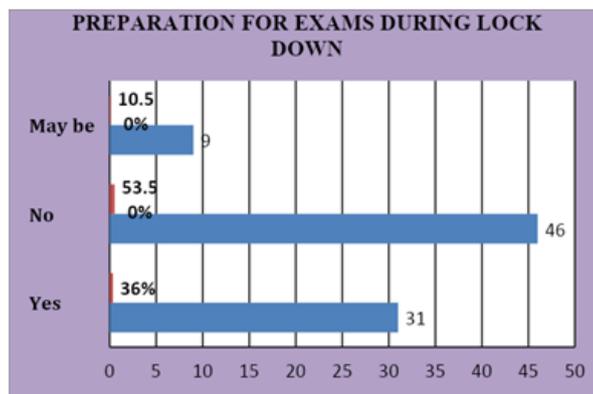


Figure 3: Preparations for Exams during Lock Down

It is clearly observed from fig no 3 that, 53.5 % of the students do not prepare for competitive exams, 36 % of the students prepare for the exams while 10.5 % answered that they may prepare for the exams

Life style changes during lock down

Table 2: Life style changes during lock down

I	S.No	Watching TV	N=86	Percent
	1	1 Hour	21	24.4%
	2	2 Hour	22	25.6%
	3	3 Hour	21	24.4%
	4	Never Watch TV	22	25.6%
	Total		86	100
II	S.No	Smoking Habit	N=86	Percent
	1	Yes	84	97.7%
	2	No	01	1.2%
	3	May be	01	1.2%
	Total		86	100
III	S.No	Consumption of Alcohol	N=86	Percent
	1	Yes	01	1.2%
	2	No	85	98.8%
	Total		86	100
IV	S.No	Chewing Betel leaves	N=86	Percent
	1	Yes	01	1.2%
	2	No	85	98.8%
Total		86	100	

Watching TV

From table no 2 it is clearly evident that 24.4% of the students watch TV for 1 hour, 25.6% of them watch TV for 2 hours, 24.4% of them watch TV for 3 hours and 25.6 % of the students never watch TV

Smoking habit

It is clearly observed that 97.7% of the students replied that they never smoke, 1.2% of the students replied they used to smoke and the remaining 1.2 % replied they may smoke sometimes depending up on situations.

Consumption of Alcohol

It is clearly understood that 98.8% of the students replied that they never drink any kind of alcoholic beverages, and the rest of the 1.2 % of students replied that they drink different brand of alcohol drinks which may be available in the shop.

Chewing Betel leaves

It is clearly seen that 98.8% of the students answered that they never chew pan or beetle leaves and the remaining 1.2 % of students answered that they chew pan and betel leaves.

Physical acitivity during lock down

Daily Exercise

From fig no 4, it is concluded that 76.6 % of the students used to do exercise daily and 23.3% do not do exercise daily at any cost.

Hours of Exercise

It is clearly evident from the fig no 5 that, 79 % of the students spend one hour in doing exercise followed by 14% of the students spend two hour, 3.5% of the students spend three hour in doing exercise, 1.2% of the students spend four hour in doing exercise and only 2% do exercise daily up to 5 hours in a day

Exercise Preferred

It is clearly observed from fig no 6 that 69.8% of the students preferred walking, 4.7% of the students preferred jogging, another 4.7% of the students preferred skipping, 12.8 % of the students preferred cycling. 7.1% of the students preferred running and the remaining1.2% of the students preferred swimming.

Interest in Yoga

It is clearly noted from the figure no 7, that 50 % of the students are interested in yoga while other 50 % are not interested in doing yoga practices.



Figure 4: Daily Exercise

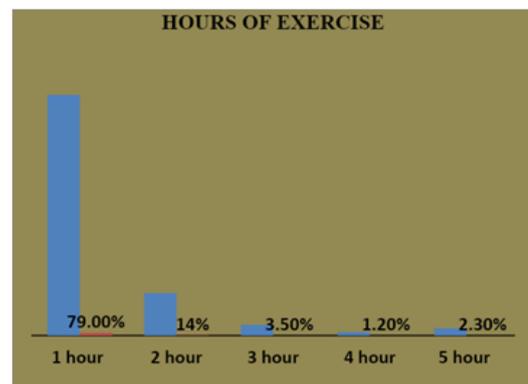


Figure 5: Hours of Exercise

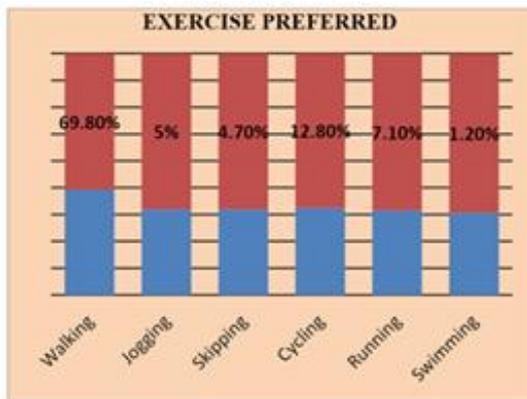


Figure 6: Exercise Preferred

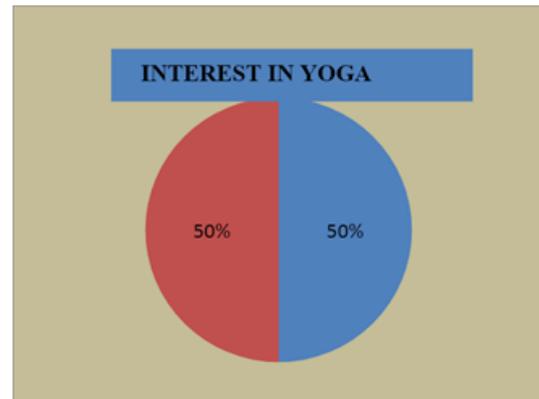


Figure 7: Interest in Yoga

Dietary preferences during lock down

Eating fruits

From table no 3, it is clearly viewed that 83 % of the students like eating fruits, 2.3 % of the students don't like eating fruits and the remaining 1.2% of the students may like eating fruits

Consuming fast foods

It is clearly stated that 59.3% claimed that they consume fast foods and 40% of the students do not consume fast food at all

Diet Preferences

With regard to diet preferences 15.1% of the students were vegetarians, 81.4% of the students were non vegetarians, 3.5% of the students were ova vegetarians and none of the student comes under the category of lacto vegetarian.

Consuming Carbonated Beverages

With respect to carbonated beverages used 24.4% of the students said that they like using carbonated beverages, 60.5% of the students never use carbonated beverages and 15.1% of the students answered they may like carbonated beverages sometimes.

Table 3: Dietary preferences during lockdown

I	S.No	Eating Fruits	N=86	Percent
	1	Yes	83	96.5%
	2	No	02	2.3%
	3	May be	01	1.2%
	Total		86	100
II	S.No	Habit of Consuming Fast Foods	N=86	Percent
	1	Yes	51	59.3%
	2	No	35	40.7%
	Total		86	100
III	S.No	Diet Preferences	N=86	Percent
	1	Vegetarian	13	15.1%
	2	Non Vegetarian	70	81.4%
	3	Ova Vegetarian	03	3.5%
	4	Lacto Vegetarian	Nil	Nil
	Total		86	100
IV	S.No	Consuming Carbonated Beverages	N=86	Percent
	1	Yes	21	24.4%
	2	No	52	60.5%
	3	May be	13	15.1%
	Total		86	100

N denotes the Total number of students

Changes in food selection during pandemic

Skipping foods during lock down

From table no 4 it is clearly evident that 43% of the students gave answers that they used to skip breakfast meals, 47.1% of the students answered they won't skip breakfast and the last 9.3% of the students answered they may skip the breakfast

Table 4: Life style changes during lock down

I	S.No	Skipping Foods During Lock Down	N=86	Percent
	1	Yes	37	43%
	2	No	41	47.1%
	3	May be	08	09.3%
	Total		86	100
II	S.No	Inclusion of GLV, Legumes and Nuts	N=86	Percent
	1	Yes	64	74.4%
	2	No	11	12.8%
	3	May be	11	12.8%
	Total		86	100
III	S.No	Home Made Food Preferences	N=86	Percent
	1	Yes	83	96.5%
	2	No	03	3.5%
	3	May be	Nil	Nil
	Total		86	100
IV	S.No	Avoid Processed Foods	N=86	Percent
	1	Yes	58	67.4%
	2	No	10	11.65
	3	May be	18	20.9%
	Total		86	100
V	S.No	Naturopathic Food Preference	N=86	Percent
	1	Yes	56	65.1%
	2	No	30	34.9%
	Total		86	100
VI	S.No	Herbs Most Used	N= 86	Percent
	1	Tulsi	48	55.8%
	2	Neem	37	43%
	3	Mint	31	36%
	Total		86	100
VII	S.No	Spices Used	N= 86	Percent
	1	Turmeric	36	41.9%
	2	Ginger	41	47.9%
	3	Gralic	09	10.5%
	Total		86	100

VIII	S.No	Fruits Mostly Used	N= 86	Percent
	1	Papaya	20	23.3%
	2	Lemon	23	26.7%
	3	Pomegranate	11	12.8%
	4	Apple	15	17.4%
	5	Orange	09	10.5%
	6	Guava	04	4.7%
	7	Grapes	04	4.7%
	Total		86	100
IX	S.No	Balanced Diet at HomeLock Down	N= 86	Percent
	1	Yes	55	64 %
	2	No	31	36%
	Total		86	100
X	S.No	Eating Snacks Between Meals	N= 86	Percent
	1	Yes	42	48.8%
	2	No	28	32.6%
	3	May be	16	18.6%
	Total		86	100
XI	S.No	Opinion Regarding Weight	N= 86	Percent
	1	I lost weight	11	12.8%
	2	Gained some weight	30	34.9%
	3	Stable weight	31	3.6%
	4	Don't know	14	16.3%
	Total		86	100

N denotes the Total number of students

Inclusion of green leafy vegetables and nuts

It is clearly observed that 74.4% of the students replied that they use green leafy vegetables and nuts in their diet during lock down, 12.8% of the students replied they didn't use green leafy vegetables and nuts during lock down and the remaining 12.8% replied that they may use the same

Homemade food preference

It is clearly understood that almost 96.5 % of the students reported that they preferred homemade food during lock down, 3 % of the students reported that the didn't like

homemade food during lock down, but none of the students reported that they may be liking homemade foods.

Avoid processed foods

With regard to processed foods, 67.4% of the students said that they avoid processed foods during lock down, 11.6% of the students said that they use processed foods during lock down and the rest of the 20.9% of the students reported that they may be using processed foods

Naturopathic diet food

With respect to naturopathic food used 65.1 % of the students voted that they use naturopathic foods during lock down and the remaining 34.9% of the students voted that they never use naturopathic foods during lock down

Herbs most used

It is clearly known that tulsi was used by 55.8% of the students, followed by 43% of the students used neem and the later used mint by 36%

Spices used

While 41.9% of the students polled that they use turmeric during lock down, on the other end 47.7% of the students used ginger and the remaining 10.5 % used garlic during lock down

Fruits most consumed

Among the category most of the fruits consumed, 23.3% of the students consumed papaya, 26.7% of them consumed lemon, 12.8% of them consumed pomegranate, 17.4% of them consumed apple, 10.5% of them consumed orange and the last 4.7% of them consumed guava and grapes

Balanced diet at lock down

Nearly 64.4% of the students admitted that they have a balanced diet at home during lock down, where 36% of them didn't admit that they have a balanced diet at home during lock down

Eating snacks between meals

When answered for the question "Do u have the habit of eating snacks between meals?" 48.8% of the students opened their answers as "Yes", followed by 32.6% of the students as "No" and 18.6% of the students as may be.

Weight changed after pandemic

About 12.8% of the students exhibit their answers that they lost their weight, 34.9 % of them as they gained some weight, 36% of them had the stable weight and the rest of them 16.3% exhibited the answers as they don't know

Summary and Conclusion:

The findings of the study concluded that the pandemic has entirely distracted the education as well as the health and dietary preferences too. Some students don't give much importance in reading books and preparation for exams, since all can be retrieved from internet at the time of exams. On the other hand watching TV in between and spending more time in TV and mobile is observed. Fewer intakes of fruits, vegetables, legumes, preference of fast foods and consuming carbonated drinks may create problems in future. The study finally concludes that more students gained weight at the time of lock down. Thinking the health of student's importance must be given to exercise and physical movements so that they may maintain weight.

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A SCENARIO ON NOVEL CORONA VIRUS DISEASE (COVID-19) PANDEMIC

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Abstract:

Novel coronavirus is apparently of zoonotic origin circulated in animals before transmission to humans. The disease caused by the novel coronavirus is COVID-19. This has affected severely on respiratory system, and mildly on gastrointestinal system, central nervous system, and cardiovascular system of patients. There are multiple routes of transmission e.g., fecal-oral transmission, airborne transmission, and physical contact. The most common symptoms of this viral infection are fever, followed by dry cough, fatigue, and shortness of breath. Other less prevalent clinical manifestations include headache, diarrhea, nausea, vomiting, myalgia, and arthralgia. Diagnosis of COVID-19 is based on epidemiological history, clinical manifestations, and some auxiliary examinations, such as nucleic acid detection, CT scan, immune identification technology, and blood culture. Current therapeutics for COVID-19 includes interferons, antivirals, convalescent plasma, monoclonal antibodies, corticosteroids, and nutrition therapy. The mass vaccination drive has already begun almost worldwide. Recently, two vaccines namely Covishield and Covaxin have been introduced in India, for emergency use to fight COVID-19 Pandemic. Hopefully, vaccination will provide increased protection against COVID-19. This chapter has reviewed early historical perspective of coronavirus outbreak, sources of infection and mode of transmission, immunopathogenesis, diagnosis and clinical manifestations and potential therapeutics for COVID-19.

Keywords: coronavirus, COVID-19, epidemic, immunopathogenesis, pandemic, SARS, vaccine.

Abbreviations: Middle East respiratory system syndrome-associated Coronavirus (MERS-CoV), Severe acute respiratory syndrome associated Coronavirus (SARS-CoV), Middle East respiratory system syndrome (MERS), Severe acute respiratory syndrome (SARS), Novel Coronavirus disease 2019 (COVID-19), World health organization (WHO).

Introduction:

In 2002, an emerging infectious disease-causing pneumonia was introduced in the world. Later on, in 2003, a coronavirus was identified as the causative agent of SARS. This syndrome is characterized by respiratory infection with high fever, cough, and dyspnea and may lead to respiratory distress syndrome. The WHO reported the outbreak of SARS-CoV on 11th February 2003, when the confirmed cases exceeded 300, and then declared the disease as a global alert on March 12, 2003. The first case was reported from China in 2002, and then in 2003, the virus spread to Hong Kong, Singapore, Toronto, and Hanoi. This transmission was mainly via human to human contact with respiratory droplets, and most happened in markets (Li *et al.*, 2020). This disease was controlled after 7 months. Now, our eyes have witnessed how novel corona virus disease outbreak has emerged from December 2019. On 11th February, 2020, the World Health Organization (WHO) officially named to a new type of coronavirus acute respiratory disease as ‘Coronavirus Disease 2019 (COVID-19)’. On the same day, the International Viral Classification Commission officially named the disease-causing coronavirus as severe acute respiratory syndrome coronavirus 2’, which has been abbreviated as SARS-CoV-2 (Nile *et al.*, 2021).

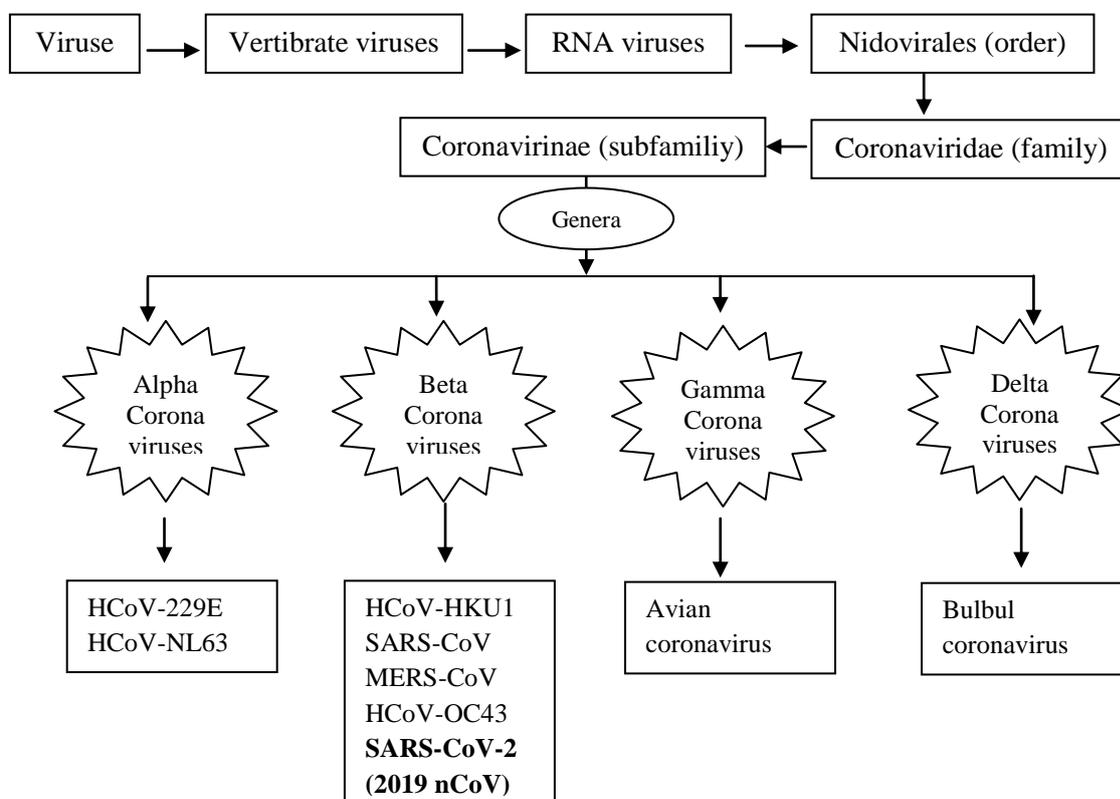


Figure 1: General classification of Coronaviruses

Approximately 13 million people were affected by COVID-19 in July, 2020 worldwide. Before the novel SARS-CoV-2 appeared, six human coronaviruses were reported relating to either alpha- (HCoV-229E and HCoV-NL63) or betacoronaviruses (HCoV-OC43, HCoV-HKU1, MERS-CoV, and SARS-CoV) (Shereen *et al.*, 2020). The novel coronavirus that causes COVID-19 shares significant similarities with the SARS-CoV from the structural and pathological points of view and is, therefore, classified as a betacoronavirus and called SARS-CoV-2. Coronaviruses are enveloped viruses containing non-segmented, single-stranded, and positive-sense RNA, which is the largest genome among RNA viruses (Adhikari *et al.*, 2020; Rezaei, 2020; Saxena 2020; Zhao *et al.*, 2020; Ozturk *et al.*, 2021). International Committee on Taxonomy of Viruses has classified coronaviruses as given in Figure 1.

Source of infection and mode of transmission

Outbreaks of human coronaviruses are apparently of zoonotic origin, circulated in animals before transmission to humans. SARS-CoV-2 first occurred in late December 2019, in Wuhan, China, where several cases of unexplained pneumonia have been reported. Most of the infected or confirmed patients of COVID-19 were living near the local Human seafood wholesaler of Wuhan where live (wild and cultivated) animals were widely sold. Notably, evidences have shown the existence of SARS-CoV in bats, palm civets, and raccoon dogs. MERS-CoV occurs in its primary host camel, however bats can transmit it. The spread of SARS-CoV-2 is mainly dependent on respiratory droplets, bioaerosols, eye-nose and fecal-oral transmission routes (Rezaei, 2020; Rabbani and Al Saigul, 2021; Goyal *et al.*, 2021).

Immunopathogenesis of COVID-19

The mechanism of coronavirus entry and spread and role of immune system help to understand Immunopathogenesis of COVID-19 (Lee *et al.*, 2020).

- (a) *Virus entry and spread:* The coronavirus infection occurs when it acts on the host cells. In case of SARS-CoV-2, the receptor binding domain (RBD) of the spike (S) protein binds strongly to human and bat angiotensin-converting enzyme 2 (ACE2) receptors of respiratory epithelial cell; which undertake the attachment of the virus to the cell membrane and then the fusion of cellular and viral membrane. Then, viral internalization does occur by endocytosis. Upon the cell entry of the virus, the

presentation of viral antigens by antigen-presenting cells (APCs) leads to the activation of immune responses. Less is understood about the mechanism of presentation of SARS-CoV-2 (Jacques and Apedaile, 2020; Rezaei, 2020; Tai *et al.*, 2020).

(b) Pathological Findings: It has been reported that, acute respiratory distress syndrome (ARDS) and multiorgan dysfunction syndrome (MODS) are the most common reasons of death of COVID-19 patients. In these syndromes, lungs and kidneys are severely damaged than liver and heart. COVID-19 can affect some other systems, for example, gastrointestinal system, central nervous system and cardiovascular system (Rezaei, 2020; Magar *et al.*, 2021; Wang *et al.*, 2021)

(c) Role of immune system during COVID-19: Both SARS-CoV and MERSCoV possess structural and nonstructural proteins that prevent type I interferon (IFN) responses from being generated. Inhibition of type I IFN responses in the early phase of infection leads to progression to severe infection. In people with COVID-19, cytotoxic T lymphocytes (CTLs) and natural killer (NK) cells not only were reduced in number but also functionally exhausted as indicated by the increased expression of exhaustion markers NKG2A on NK cells and PD-1 and Tim-3 on T cells. Cytokine storm syndrome (CSS) has also reported in COVID-19 patients. Cytokines are a large group of signaling protein, peptide or glycoprotein molecules that are secreted by specific cells of immune system. CSS refers to maladaptive release of cytokines including malignancy, ARDS, cytokine release syndrome, familial hemophagocytic lymphohistiocytosis, systemic juvenile idiopathic arthritis, and macrophage activation syndrome (Rezaei, 2020; urRehman 2020).

Diagnosis and clinical manifestations of COVID-19

Diagnosis of COVID-19 is mainly based on nucleic acid detection, computed tomography (CT) scan, immune identification technology, and blood culture. The two commonly used nucleic acid tests for SARS-CoV-2 are real-time quantitative polymerase chain reaction (RT-qPCR) and high-throughput sequencing. Serologic tests are also a better way of diagnosis since they are easy to perform and require less technical expertise and equipments. The most common symptoms of this viral infection are fever, followed by dry cough, fatigue, and shortness of breath. Other less prevalent clinical manifestations include headache, diarrhea, nausea, vomiting, myalgia, and arthralgia. In the mild form of the disease, alterations in the

sense of smell and taste are commonly reported by the patients, and the clinicians should consider these symptoms as initial apparent symptoms of the disease (Rezaei, 2020; Li *et al.*, 2020a; Long *et al.*, 2020; Rai *et al.*, 2021).

Potential Therapeutics for COVID-19

There is no specific known treatment to combat with SARS-CoV2, however beta-interferon in combination with some probably potent antiviral drugs have been suggested by a few researchers for COVID-19 therapy. Chloroquine and hydroxychloroquine were the very first proposed candidates in drug discovery trials, but these drugs were found to be non significant in computational methods. Some therapeutics for COVID-19 includes convalescent plasma, and corticosteroids. Vaccines have been proved a hopeful and magical tool in prevention of diseases. Many researchers have proposed different strategies for vaccine development based on DNA, RNA, recombinant subunit, live attenuated virus and inactivated virus platforms. The mass vaccination drive has already begun almost in worldwide. Recently, two vaccines namely Covishield and Covaxin have been introduced in India, for emergency use to fight COVID-19 Pandemic. Covishield has been developed by the Oxford University scientists in collaboration with a British-Swedish pharmaceutical company AstraZeneca. Covishield vaccine has been developed by using a weakened version of adenovirus that causes common cold infections among chimpanzees. Its genetic material is same as that of the spike protein of SARS-CoV. Covaxin has been developed by Bharat Biotech, India and clinical research body of Indian Council of Medical Research (ICMR). Covaxin is an inactivated vaccine that means inactivated (dead) viruses are injected into a human body trying to trigger an immune response (Retrieved from scoopwhoop.com). Some other vaccines against COVID-19 include BNT162b2/COMIRNATY (INN tozinameran) manufactured by Pfizer (Biontech), AZD1222 manufactured by AstraZeneca (University of Oxford), mRNA-1273 manufactured by Moderna, Ad26.COVS.2.S manufactured by Sinopharm, SARS-CoV-2 (Vero Cell) manufactured by Sinovac, and Ad26.COVS.2.S manufactured by Janssen (Rezaei, 2020; Hamid *et al.*, 2020; Varghese *et al.*, 2020; Adeli *et al.*, 2020; Zang *et al.*, 2020; Pandey *et al.*, 2021; Kwok *et al.*, 2021).

Conclusion and future prospective

COVID-19 pandemic has greatly affected healthcare system, education, and economy worldwide. It has induced public panic. The factors such as lockdown, quarantine, restricted economic activities have drastically affected the mental health of the general population. Therefore, Media, healthcare organizations, and authorities should address the psychosocial effects by providing appropriate content and supportive regulations. Next-generation sequencing and reverse genetics have been proved as effective tools that could accelerate the vaccine development process in the time of epidemics. Prevention is always better than cure hence government of many countries is recommending the vaccination against COVID-19. Although global wave of the COVID-19 has reduced but the authorities and individuals must be ready for the next assault of the novel coronavirus and other emerging viruses.

Declaration of competing interest:

The authors declare that they have no conflict of interest and no known competing financial interests or personal relationships that could have appeared to influence the work reported in this review chapter. This review article has been based on data published as either open or exceptionally accessible till May, 2021.

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AN ANALYSIS OF CORONA VIRUS SPREAD IN INDIA DURING THE YEAR 2020-2021

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Abstract:

From the beginning of civilization, epidemics continuously impacting the human life and intervened their socio-economic structure. There is a history of many epidemics such as Plague, Black Death, Cholera, Smallpox, Spanish Flu, Swine Flu, Bird Flu, Ebola and HIV/AIDS etc. Some causes death a few hundreds to thousands in number while some killed in lakhs and in uncountable figures. They break the chain between human and their modern human environment, block their progress, negative growth in economy can be seen during epidemics, social structure also damage brutally by them. Sometime young people gone to death just like during Spanish flue, while some time they can be harmful for the aged people and the persons have weak immunity as can be seen during Corona virus spread.

Keywords: Epidemics, Pandemics, Spanish flue, Variants, Lock-down and Vaccine.

History of Epidemics:

Epidemics appearance is not new for the world. For the Beginning of civilizations their occurrences impacts the human environments in hazardous manner. Modern Era of human civilization is based upon the blind harassment of the Natures, which create the favorable conditions for the spread of epidemics. As we know in historical period, during the time of Athens war (430 B.C.) first time an epidemic came and affects Libiya, Ithopiya and Egypt. In the 14th century Plague spread in European countries and for 350 years it killed thousands of peoples in the world basically in Britain, Germany and Italy (Cambridge Economic History of Europe, sec-4). In 1655, the London's one fifth population reported affected by the Plague. In year 1817 outbreak of Cholera Epidemic killed thousands of people in Russia, Spain, Africa, Indonesia, china, Japan, Italy etc. In the end of 18th century Plague was spread in Bengal and Bombay presidency (India) when plague manifesto was regulated by the Swami Vivekanand with the help of Sister Nivedita and by the British Government for Cleanliness and hygiene. In

the year 1918 according to Sanitary Commission Report, many lakhs of peoples reported dead due to Spanish Flue in India when all the rivers of India had dead bodies because of rituals and cremation problems faced, same as seems in Corona period when some newspaper report the dead bodies of corona patient threw in India Rivers. During the year 1974, thousands of people reported dead due to Chechak in India.

So it is observed that Epidemics has a drastic history not only in India but on entire Earth also. Time by time they occurs and try to destroy the human civilization because of some natural as well as man-made reasons. Some time it controls on early stages when remedy or vaccine is available because of medical science and improvement in health infrastructure while sometimes, it takes much time to control when virus mutant themselves in different forms as Covid-19 mutant itself in many variants.

Objectives:

This study aims to find out the actual situations during Covid-19 spread and analysis their impacts on socio-economic conditions.

Methodology:

This study based upon the information collected during the different newspapers during covid-19 months and the data published on the different website by government and institutional officials. Graph & tables made in excel or word sheets with help of data released by the different institutions and calculation or tabulation done numerically.

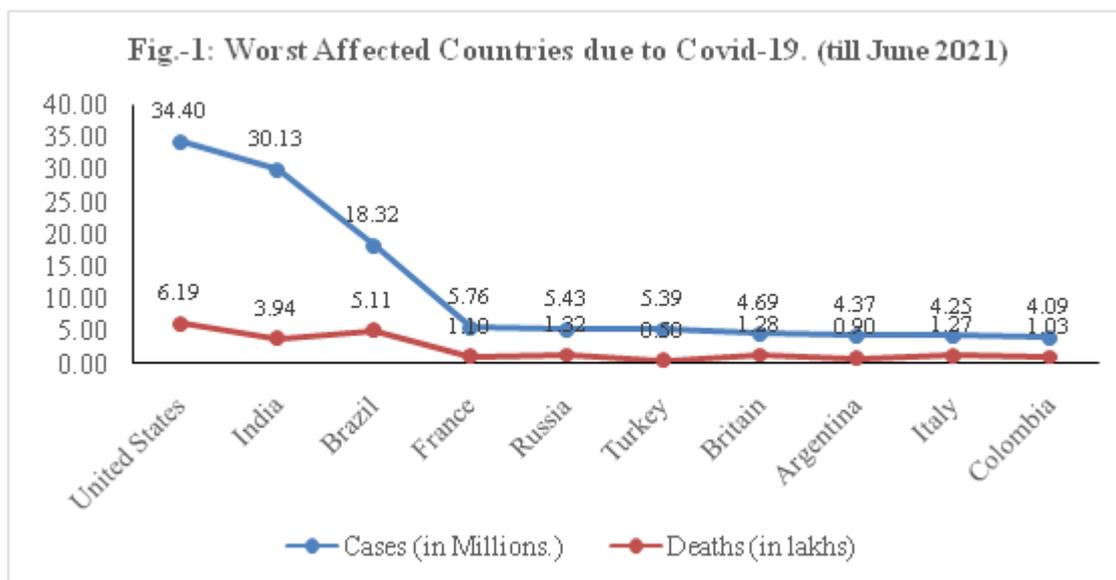
Introduction to Novel Corona Virus (Covid-19):

As we know in January 2020 Chinese state media reported a mysterious pneumonia outbreak Identified as novel coronavirus in Wuhan city (China) and which spread around the world. In a very short time period because of globalization world, all the developed, undeveloped or developing economies found under the black shadow of Covid-19 (Novel Corona Virus) spread. On 30th January, 2020 World Health Organization (WHO) declared it as a public health emergency and on 11th March, 2020, WHO declared Covid-19 as a global pandemic. At present approximate 160 countries reported Covid-19 cases, some of them have alarming figures and many of those faces its second wave which is more critical than first waves because it mutant itself in many variants. Around the world, more than 170 million of persons

affected due Covid-19 and more than 3.8 million persons reported dead due to Corona virus spread. While in India more than 30 millions of people get affected and more than 3.9 lakhs of people reported dead due to Corona virus spread. Indian Council of Medical Research (ICMR), conducted three Sero survey in India to find out the infection rate among the Indian society during September 2020, and during 17 December, 2020 to 08 January, 2021. Second Sero survey represents every 15th persons got infection among India, while third sero survey represents every 5th person found infected by Corona Virus disease in India.

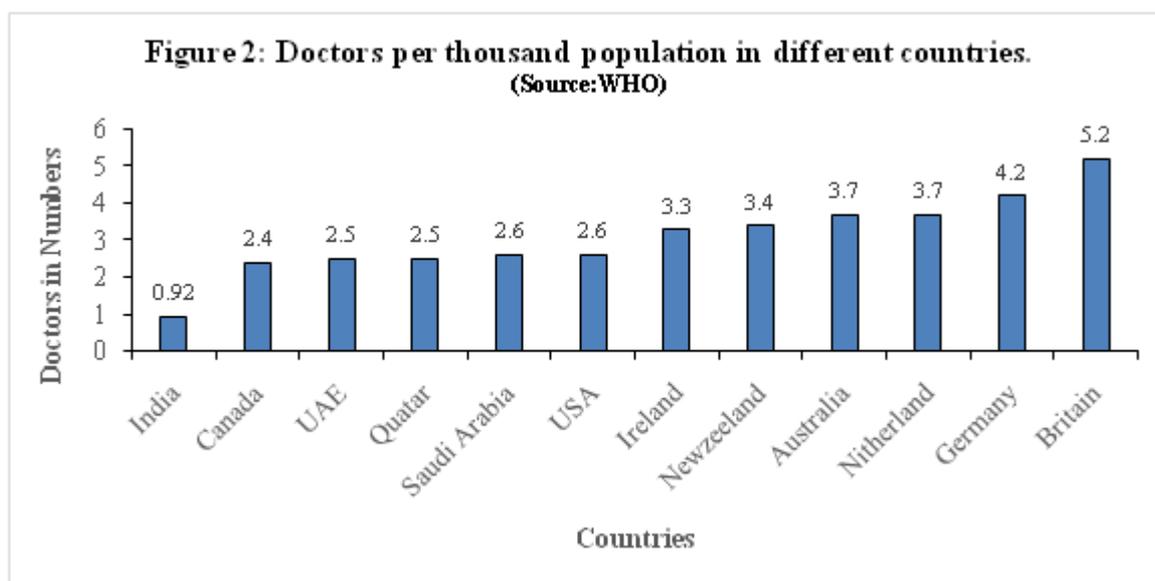
Discussion:

All around the world more than dozens of corona variants found. Wherever, P.1 strain (Amazon, variant) hit in Brazil during the second wave, while B.1.617.2 strain (delta variant) affected brutally in India and mutant itself in delta plus variant (K417N strain). In spite of this British variant B.1.1.7 and South African variant B.1.351 are also found in India, which makes the situation more critical.



USA, India, Brazil, Turkey, Russia, U.K., Italy, Argentina etc. are the major affected countries due to Covid-19 spread (Fig.-1) while all these regions have different socio-cultural and different eco-political environment. Some of these affected drastically in second waves while some in first waves but all suffered a lot of casualties during pandemic. In India, many states such as Maharashtra, Karnataka, Kerala, Tamilnadu, Andhra Pradesh, Uttar Pradesh, West-Bengal, Delhi, Chhattisgarh, Rajasthan, Orissa, Gujarat, Haryana, Telangana and Punjab reported Corona cases in lakhs of infected people, Maharashtra state has the alarming figure

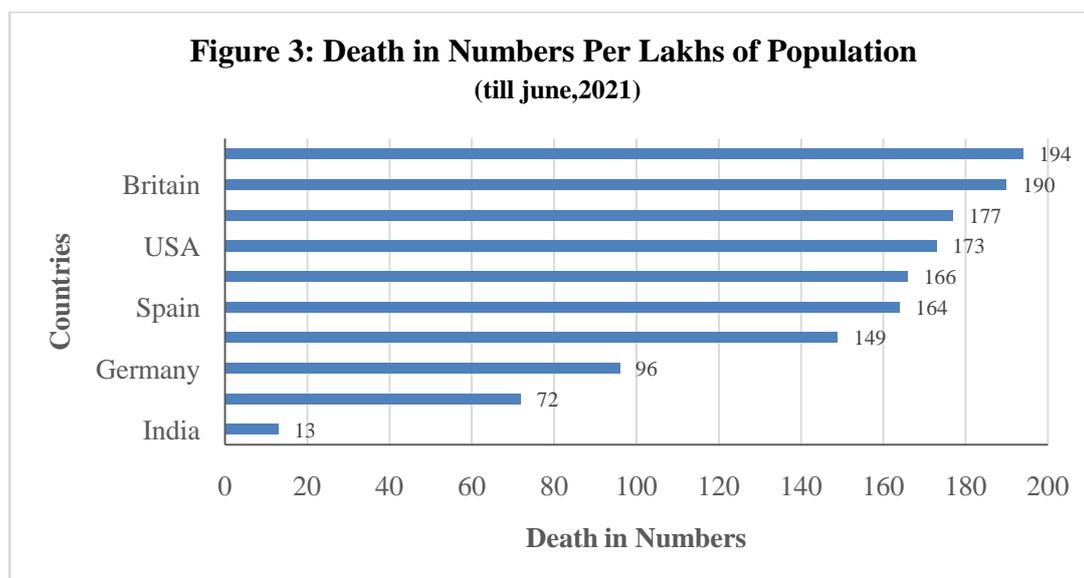
more than 50 lakhs corona patients, especially in economic capital Mumbai. State Governments and health infrastructure in Indian were not ready and not in proper manner to face epidemic especially during the second waves. Miserable condition of health infrastructure and poor medical facilities got failed during the second waves, lacks of oxygen cylinder in hospitals causes more casualties, remedies injection were not available, beds in hospital were inaccessible, shortages of ambulance were seen, shortages of doctors (Fig.-2) and other medical staff were seen, price of medicine gone high, black marketing made situation critical which causes several deaths, while many people died due to lack of awareness also.



Unavailability of oxygen was the prime cause of critical situation, it was noted, during the second wave on 17th April 2020, when 2 lakhs of patient were coming daily the demand of oxygen was 3800 metric tons per day, while after 15 days it crossed the demands of 6600 metric tons per day when highest figure of corona patient (on 6th May 2020, more than 4 lakhs infected persons) came to know. While only 15% to 20% of patients need for the oxygen, but situation was so tense that oxygen uses in steel plants were also sent to the hospitals. As we know during the first wave in year 2020, Indian Government has decided to establish 160 oxygen plants around the country.

However, India represents a better position in comparison of many other countries during the outbreak, where only 13 deaths reported on 1 lakh of population while it is 72 in Russia, 149 in France, 173 in America and 194 in Italy (Fig.-3). Our health infrastructure and medical facilities platform looks feeble in front of European and American countries health infrastructure. There is a possibility that our life style basically our dietary habits and use of

Ayurveda's make our immunity strong to fight against this Corona virus. Indian Central Government Ministry of Ayush suggested to intake ayush-kadha as an immunity booster during corona and practices Yoga in daily life. Some other ayurvedic immunity booster also launched in country to cure the covid-19. They can be helpful but seems to be more research and practices in this field.



As the World Health organization (WHO) declared Corona Virus spread as a global pandemic on 11 March, 2020, all around the world medical scientist tried to find out the vaccine which control the Covid-19 spread and break down its chain. In India, 37 laboratories with 4000 working scientists the Council of Scientific and Industrial Research (CSIR) has started their research and prepare two vaccines during the month of January 2021 named Covishield with the help of Britain and Covaxin on its own basis, while USA made Pfizer vaccine and Russia Made Sputnik-V, which was the first vaccine of Covid-19 in the world. Besides of this WHO and other regional health agencies suggested to follow some guidelines to prevent the Corona spread such as maintain the physical distancing to each other, wearing masks, use sanitizers, cleanliness and isolate or quarantine the patients. For example the General Council of Ragusa (modern Dubrovnik) across the Adriatic Sea enacted a law in the year 1377 (during Plague) to prevent the epidemic from spreading, according to that law, every ship and merchant convoy arriving in Ragusa was to remain in isolation for 30 days which saves not only their lives but their economy also while Venice allowed ship to enter without isolation process and lost their economy and many lives due to that epidemic. In another example of USA, during the study of Spanish flu in year 1918 the Loyola University scientists found approximate 1/3rd population

of the world affected by flue and in that period wearing masks, isolation, cleanliness were the major steps adopted to prevent from Spanish flue. In the cities like San-Francisco, SaintLouis, Milwaukee or Kansas where these steps adopted with self-awareness, a sharp decline of 30% to 50% in death rate were noted.

As the Spread of Corona virus causing intense surprise to everybody in first wave as it was more accidental in second waves, when our disgusting health structure become helpless and it seems a failure of modernize medical system and institutional administration all around the world. Before the vaccination process was adopted on a large scale it's mutate variant especially delta infected the population on a large scales and thousands of people got infected in a day. So many governments in different countries around the world forced to put lockdown and night curfew in their regions to control the Covid-19 spread. India was also among them. Guideline regarding health protection issued by the health organizations in which wearing mask, physical distancing, sanitization, cleanliness and quarantine system implemented. Isolation ward and Cantonment zone made on a large scale. Testing, tracking, treatment and vaccination called 3T+V system implemented. Transportation, Market (Non-essentials), Hotels, Restaurants, Parks, Industrial sectors, Educational Institutes etc. were closed for almost two months during first waves while in second waves odd-even formulas were used to open markets and other economic activities. No industries can run with full strength, rotation system implemented, even working time was also gone limited while education institute and cinema were fully closed. Marriages, Cultural Activities, other functions banned for many days in both the waves and open after a month with permission of a few peoples. Places where people may gathered around, strict legal action (Fine/Jail) applied by the administration.

Affected countries implement some necessary action with many restrictions, in practices to control the corona pandemic, causes the civilization has been put in a Lockdown. The magnitude and speed of collapse in activity that has followed is unlike anything experienced in our lifetimes. These restrictions resulted in economic losses. The world has changed dramatically. All the economic sectors including industries, markets, service sectors, import-exports etc.threw in global economic recession during Covid-19. Rapid increase of unemployment has seen in many countries. The migration of workers, especially in India has seen because of lockdown in Industries. It pressurizes those states which they belongs and create a haphazard situation for their native land, where much of the resources wasted to control them which can be used in the management of pandemic. Food and shelter shortages

emerge. Railways and roadways opened to transport them which resulting in corona out break during the first wave. While in second wave transportation system is running but less in numbers so the problems to workers seems less. In India many people travelled by foot for hundreds of kilometers for their native land when transport facilities unavailable during first wave because of economic activities lockdown. Many of them being collapse during travelling while some others got accident.

Impacts:

All these situations resulting in socio-economic instability in the country, on the behalf of SBI reports some newspaper claims that due to lockdown in 10 major states of India during the second waves have lost their 1,49,970/-croreRs. of economy in present financial year. Which is equal to 0.7% of India's Gross Domestic Products (GDP). Maharashtra, Madhya Pradesh and Rajasthan covers the 80% of the total economic loss. In MSME industrial sector Improvident, mismanagement and defensive point of view damages more in comparison of other sector causes unemployment and investment failure. Due to lockdown purchasing power of middle class or lower middle class affected which causes decline in consumption of goods. Most of service sector and service provider industries gone to decline which stands as a base of present economic trend. According to Dr. Vikash Singh (Financial and Development experts,) approximate 60 % of the corporates has financial problems due to pandemic and because of this launching of new products either delayed or postponed especially in automobile sectors. When we talk about Indian economy, we can say it depends on agricultural sectors which covers 46% of total national income. Almost 69% of Indian population lives in villages and 31% lives in cities (Census 2011). Villages and towns depends on each-others and fulfill their needs. Towns runs because of villages goods production goods (for basic needs) while villages runs due to towns market system. Lock down and economic depression broke this interrelation and damages Indian village economy too. In year 2018-19 agriculture export of India was 685 billion of Indian Rupees, while it decreased during the corona spread because all the ports were closed. Every year almost 5 crores migrated workers send one lakh crore rupees to the villages in the form of their income and four crore families survive their livelihood by those income (Daink Jagran 26 April, 2021, Vikas Singh), Which helps to run the economy and work as an oxygen cylinder to India's economic system not only in villages but in cities also. Lockdown

collapse this chain. When a government and economic system try to maintain both the sectors (Villages and Urban) with the help of special financial package it causes financial deficit to the national economy which also happened with the Indian economy during the Covid-19 spread. According to Reserve Bank of India in nearby future instability can be seen in socio-economic activities and in livelihood. Reserve Bank of India estimated a 10.5 % positive growth rate, while International Monetary Fund (IMF) estimated a 12.5% positive growth rate before the second wave in India. But as second corona waves destroy the socio-economic structure around the world, there is a 1% to 1.5% of declining trend seen in the economy.

Findings:

So it is clear that 100% vaccination is the only remedy of Covid-19 with some preventive measures such as; cleanliness, using masks, keeping distances, and quarantine etc. In India first term of vaccination started from 16 January, 2021 and its aims to vaccinate 30 crore people till July, 2021, while a fully cover up shall give to all till December, 2021 to protect the peoples by another upcoming waves, which can be possible after a few weeks as some health agencies warns. By 27th June, 2021 almost 21% of Indian people vaccinate with first dose while 4.5% of Indian population have vaccinate with two dose of Covid-19 vaccine. On that day Corona positivity rate found only 2.9%, while recovery rate gone to the 96.6% in India. Approximate 40.2 crore test have been completed till 27th June, 2021, highest 5.7 crore test have been completed in Uttar Pradesh till that day. One another thing is noted during covid-19 spread that In 18 states of India approximate five thousands of Covid-19 patients affected with another disease named Mucormycosis (Black Fungal Infection) especially in Gujarat, Maharashtra, in which 55% of patient are diabetic. Death rate in Black Fungal Infection found more (15%) in comparison of Corona.

Some says next waves will be dangerous for the children, while Dr. Randeep Guleria, Director, AIIMS, New Delhi neglect it, because according to medical sciences by which receptor system this Novel Corona Virus attached to human body that is not found in the children.

Conclusions:

The present study, published reports, guidelines issued by the official and experts opinion it can be understood that lockdown is not the only remedy of Novel Corona Virus spread. However, it is helpful to break the chain of infection but it impacts our livelihood and socio-economic structure. Many other tools can be adopted such as physical distancing,

quarantine, containment zonebuilding, wearing masks, self-sanitization, use of medicine on time, use of Ayurveda's, maintain the immunity system, yoga, implemente rotation system in economic activities like in markets and in industries, limit the crowd gathering in transports and in cultural programs like in marriages and functions, opening the restaurants and cinemas with some strict legal restrictions ,to regulate online system in education and in service sectors, to update the health infrastructure and self-awareness during pandemic etc.,also contribute in Covid-19 defeat. Another major remedy is to vaccinate all the people around the earth, then 80% to 90% of infection possibility will decrease automatically. So 3T+V (Testing, Tracking, Treatment + Vaccine) process should be adopted. Oxygen plants should establish. Beds and proper medicine will be available to the hospitals. Medical staff and medical equipment's such as oxygen cylinders and ambulance facilities also provided to the health machineries. Health advisory and guidelinesshould be issue by time to time and information related to corona update issued by the officials on time to prevent the pandemic situation in the country. Self-awareness programs such as fight against corona virus should start among the society. Coordination committee between government officials and public can be formulating. All these programs and steps protect us to any kind of epidemics. As we become irresponsible as we will in next wave which can be harmful to human beings and to human civilization. By the history we defeated many epidemics like Plague, Black Death, Cholera, Smallpox, Ebola, Spanish Flu, Swine Flu, Bird Flu etc. and now we defeat the Novel Corona Virus also.

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COVID 19 PANDEMIC: A CYCLONE IN THE FIELD OF EDUCATION

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Introduction:

Today the world is facing the novel Coronavirus "COVID-19" pandemic, to which countries all over the world are stepping up their response to control the spread of infection and to strengthen prevention.

Focus is on study of the spread pattern of the virus and placing the highest priority to preserving the lives and safety of citizens. The measures deployed (including curfews, limiting mobility, and the confinement of businesses those considered essential, and the closure of schools and universities) would have negative socio-economic consequences on population and their living conditions.

Besides the immediate and tragic impacts of the COVID-19 pandemic on health, the preventive behavioral responses by households and the government's transmission control policies are likely to affect livelihoods and welfare through multiple channels. First, the need to attend sick family members or to recover from the illness and the sharp decline in national economic activities will reduce households' labor earnings from wages and self-employment. Second, the economic slowdown will reduce domestic and international remittances, impacting households' non-labor income.

Third, disruption in domestic and international supply chains may increase prices, particularly for food, while reduced access to education, healthcare, transport and other services will also significantly impact the society. These deprivations include rising malnutrition, school dropouts, child and maternal mortality, and violations including child labor, gender-based violence and violence against children.

The covid -19 pandemic has created the largest disruption of education system in human history, affecting nearly 1.6 billion learners in more than 200 countries. Closures of schools, institutions have impacted more than 94% of the world student population. It has

made a dreadful impact on child education most notably on poor and deprived families. Experts say that shorttime out of education will have its effect on children. When schools are closed for a more extended period; it may have longlasting impact on them. Children may forget what they already know while online classes may prevent this regression for some, it is going to affect severely to those who lack access to technology and internet connection. Teachers have faced a turbulent year, forced to consider how technology could be used to keep learners safe and engaged in education during a pandemic Research highlights certain dearth such as the weakness of online teaching infrastructure, the limited exposure of teachers to online teaching, the information gap, non-conducive environment for learning at home, equity and academic excellence in terms of higher education. This article evaluates the impact of the COVID-19 pandemic on teaching and learning process across the world. The challenges and opportunities of online and continuing education during the COVID-19 pandemic is summarized and way forward suggested. E-learning tools have played a crucial role during this pandemic, helping schools and universities facilitate student learning during the closure of universities and schools (Subedi *et al.*, 2020). While adapting to the new changes, staff and student readiness needs to be measured and supported accordingly. The learners with a fixed mindset find it difficult to adapt and adjust, whereas the learners with a growth mindset quickly adapt to a new learning environment. There is no one size-fits-all pedagogy for online learning.

There are a variety of subjects with varying needs. Different subjects and age groups require different approaches to online learning (Doucet *et al.*, 2020). Online learning also allows physically challenged students with more freedom to participate in learning in the virtual environment, requiring limited movement (Basilaia & Kvavadze, 2020). As schools have been closed to cope with the global pandemic, students, parents and educators around the globe have felt the unexpected ripple effect of the COVID-19 pandemic. While governments, frontline workers and health officials are doing their best slowing down the outbreak, education systems are trying to continue imparting quality education for all during these difficult times.

Many students at home/living space have undergone psychological and emotional distress and have been unable to engage productively (Petrie, 2020). Children of the poor both in urban and rural areas in India are thus denied education in this 'new normal'. Thousand of children are pushed out of education and are plunged into early marriage of labour force. 63%

of the world's school age children - 1.3 billion children age 3 to 17 have no internet access at home. According to UNICEF-ITU report two third of the worlds school age children have no internet access at home, compared with nearly 9 in10 from high income countries. Even in developed countries connectivity is low among those with low income.

According to PEW Research centre survey, in the United States in April 2020, 43% of lower income parents with children whose schools were shut down said their kids would have to do schoolwork on their cell phones and 36% said their children would be unable to do school work because they lacked access to a computer at home. Among those with internet, 52% of lower income broadband users said they worried about being able to pay for their high speed internet connection over time.

Different pedagogies in use:

Distance learning can involve a combination of synchronous (live learning in which students learn with the teacher at the same time) and asynchronous (students learning independently at different times) approaches. A synchronous approach has communication happening in real time allowing for instant feedback and clarification (such as through live video conferencing). An asynchronous approach is done without live communication (emails, flipgrid, blogposts, pre-recorded flipped lessons etc) usually chosen when students work at their own pace which is more flexible.

The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners. Some of the online platforms used so far include unified communication and collaboration platforms such as Microsoft Teams, Google Classroom, Canvas and Blackboard, which allow the teachers to create educational courses, training and skill development programmes (Petrie, 2020). They include options of workplace chat, video meeting and file storage that keep classes organized and easy to work. They usually support the sharing of a variety of content like Word, PDF, Excel file, audio, videos and many more. These also allow the tracking of student learning and assessment by using quizzes and the rubric-based assessment of submitted assignments. The flipped classroom is a simple strategy for providing learning resources such as articles, pre-recorded videos and YouTube links before the class. The online classroom time is then used to deepen understanding through discussion with faculty and peers (Doucet *et al.*, 2020). This is a very effective way of encouraging skills such as problem-solving, critical thinking and self-directed learning. The virtual classroom platforms like

videoconferencing (Google Hangouts Meet, Zoom, Slack, Cisco, Webex) and customizable cloud-based learning management platforms such as Elias, Moodle, Big Blue Button and Skype are increasingly being used.

Challenges for educators and learners:

Firstly, there is no one-size-fits-all in distance learning. There is a great variety of subjects with varying needs. Some are easily translated into online at-home environments. Others, such as those subjects with a large practical component (e.g physical education, the arts and home economics) or that required specialised equipment (such as woodwork, media, or science practicals) are not physically replicated outside of the physical grounds of the school. Broadly identified challenges with e-learning are accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy (Murgatroid, 2020). Many countries have substantial issues with a reliable Internet connection and access to digital devices. While, in many developing countries, the economically backward children are unable to afford online learning devices, the online education poses a risk of exposure to increased screen time for the learner. Therefore, it has become essential for students to engage in offline activities and self-exploratory learning.

Lack of parental guidance, especially for young learners, is another challenge, as both parents are working. The level of academic performance of the students is likely to drop for the classes held for both year-end examination and internal examination due to reduced contact hour for learners and lack of consultation with teachers when facing difficulties in learning/understanding (Sintema, 2020). Various state-level board exams, recruitment exams, university-level exams and entrance exams have been postponed across India due to the COVID-19 outbreak and national lockdown. Various entrance examinations (such as BITSAT 2020, NATA 2020, CLAT 2020, MAT 2020, ATMA 2020) have also been postponed/ rescheduled. The education system in schools, colleges and universities across the country has been severely impacted due to the ongoing situation.

As all students' assignments and examinations are carried out from home, it is challenging for educators to find the authenticity of the work and the actual learning taking place. Moreover, many parents guide and support their children during their learning process and the extent and degree of support varies greatly. Grading of students is another area of study as no proper criteria are developed and effectively used.

Impact on social life of learners:

School time also raises social skills and awareness besides being fun for the children. There are economic, social and psychological repercussions on the life of students while they are away from the normal schedule of schools. Many of these students have now taken online classes, spending additional time on virtual platforms, which have left children vulnerable to online exploitation. Increased and unstructured time spent on online learning has exposed children to potentially harmful and violent content as well as greater risk of cyberbullying.

School closures and strict containment measures mean more families have been relying on technology and digital solutions to keep children engaged in learning, entertained and connected to the outside world, but not all children have the necessary knowledge, skills and resources to keep themselves safe online. Parents whose children are in lower grades feel that it would be better to let the children repeat the next academic year. Majority of students do not have access to smartphones or TV at home in addition to poor Internet connectivity. There is no or less income for huge population due to closure of business and offices. The data package (costs) is comparatively high against average income earned, and continuous access to Internet is a costly business for the farming community.

Advantages due to changed situation:

It has forged a strong connection between teachers and parents than ever before. The homeschooling requires parents to support the students' learning academically and economically. Children with disabilities need additional and special support during this ongoing emergency.

The use of online platforms such as Google Classroom, Zoom, virtual learning environment and social media and various group forums like Telegram, Messenger, WhatsApp and WeChat are explored and tried for teaching and learning for the Many educational organizations are offering their tools and solutions for free to help and support teaching and learning in a more interactive and engaging environment. Online learning has provided the opportunity to teach and learn in innovative ways unlike the teaching and learning experiences in the normal classroom setting. The myriad challenges of 2020 have underscored the creativity, expertise, and perseverance of the teaching community and staff in the face of adversity. They fueled solutions that helped the world navigate this time of global confusion, anxiety, and insecurity. This drive will help navigate the recovery, in 2021 and beyond. And while the world understands more than ever how essential and how powerful the Internet can be, it still cannot replace face-to-face interaction. Rather, it plays an important supporting role

for human interaction that shines through during crises, and can be a beacon on our path back to normal.

Now the situation is:

Several elements should be assessed in deciding to re-open schools or keep them open:

- The epidemiology of COVID-19 at the local level: This may vary from one place to another within a country
- Benefits and risks: what are the likely benefits and risks to children and staff of open schools? Including consideration of:
- Transmission intensity in the area where the school operates: No cases, sporadic transmission; clusters transmission or community transmission
- Overall impact of school closures on education, general health and wellbeing; and on vulnerable and marginalized populations (e.g. girls, displaced or disabled)
- Effectiveness of remote learning strategies
- Detection and response: Are the local health authorities able to act quickly?
- The capacity of schools/educational institutions to operate safely
- Collaboration and coordination: Is the school collaborating with local public health authorities?
- The range of other public health measures being implemented outside school.

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कोरोना काल में शिक्षा व्यवस्था

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जब से इस देश में कोविड-19, कोरोना ने अपना स्थान जमाना शुरू किया है। तबसे इस देश की शिक्षा व्यवस्था पूरी तरह से जम गई है। हर शिक्षा व्यवस्था बंद ही हो गई है। चारों तरफ से संदेश आ रहे हैं की ऑनलाइन पढाई शुरू करो। पर इस कठिनाई के काल में सामान्य को खाने के लाले पडे है और उन्हें स्मार्ट फोन लेने के लिए कहे यह कहा तक उचीत है। हर घर में एक ही स्मार्ट फोन है वह ज्यादातर पिताजी के पास रहता है अगर पिताजी कुछ जरूरी काम से बहार जाते है तो बच्चें कैसे पढाई करे, अगर घर में दो बच्चें है और फोन एकही है तो पढाई कैसे होगी। इस बात की और भी ध्यान देना चाहिए।

हमारा ग्रामीण इलाका है हमने छात्रों को ऑनलाईन कुछ पाठ्यक्रम संलग्न जानकारी भेजनी चाहिए तब हमे ही छात्रों के प्रश्नों ने झकझोर के रख दिया। जैसे सर भाई की बारवी का साल है उसकी पढाई लगातार चलती है। एकने बोला की पीताजी फोन दिनभर ऑफिस में ले जाते है। एक ने कहा सर लाईट की व्यवस्था कभी होती है तो फोन चार्ज होता है और जब फोन चार्ज होता है, तो इंटरनेट बंद पडा होता है, रेंज आती ही नहीं क्या करे। एक ने कहा सर महामारी और उपरसे स्मार्ट फोन हमारे आपे से बहार है।

हमने छात्रों को समझाया की यू टूब पर जब समय मिले तब देखिएगा तब छात्र बोले सर ठिक है पर छात्रों ने प्रश्न किया पाठ्यक्रम संलग्न कुछ बाते समझ न आये तो आप तो वहा सामने नहीं होंगे तब हम किसे प्रश्न पूछे की यह कैसे होता है इसका उत्तर क्या है ऑनलाईन शिक्षा व्यवस्था का सबसे बडा प्रश्न है।

जब कोई अध्यापक छात्रों के सामने खडा होकर पढाता है तो उनके आखों में झाककर देखता है कि कितना उसे समझ आ रहा है। अगर छात्रों के चहरे देखकर अध्यापक समझ जाता है कि अबतक पढाया छात्रों को समझा है या नहीं, अगर किसी छात्रों को कोई प्रश्न हो तो अध्यापक तुरन्त उसके प्रश्न का उत्तर देते है। और जब सामने अध्यापक कोई पाठ्यक्रम पढाते है तो छात्र भी मन लगाकर ४०-५० मीनीट तक शांत बैठकर सुनता रहता है। और अगर वही छात्र यु टूब पर किसी अध्यापक का मार्गदर्शन सुने तो ४०-५० मीनीट में कितनी बार फेसबुक देखेगा, व्हाटएप्स देखेगा, उठेगा-बेठेगा उसके मुख्य उद्येश्य से वह भटकता रहेगा परिणाम स्वरुप जीस अध्यापक ने जो समझाया है उसे वह पूरी तरह से समझ ही नहीं सकता, उसे पूरी तरहसे एक बात समझ न आने के कारण वह पहली बात से सलंग्न दूसरी बात को समझ नहीं सकता।

जब पाठ्यक्रम को हमने कई भागों में विभजीत करके यू टूब द्वारा छात्रों तक पहुचाया तब छात्रों को यह समझ ही नहीं आया की पहला भाग कौनसा और दूसरा भाग कौनसा। फोन से बातचीत करके यह प्रश्न को सूलझाया गया छात्रों को हमने कहा कीहम परिक्षा लेना चाहते है, तो बहुत सारे छात्रा बोले बहुपर्यायी प्रश्न पुछे सर, पर हमने कहा भाषा विषय में लेखन शैली का महत्व है तब छात्र बोले हमे मोबाईल पर हिंदी टाईपिंग नहीं आती, अगर सिख भी जाए तो एक प्रश्न का उत्तर लिखते समय दो घंटे या उससे ज्यादा का समय भी लग सकता है। बहु पर्यायी प्रश्नों में छात्र विषय को उचित न्याय नहीं दे सकता। छात्र ने महाविद्यालय में जो ज्ञान प्राप्त किया उसे भविष्य में और विस्तृत नहीं कर सकता परिणाम स्वरुप संशोधन में कमी आयेगी।

भाषा विषय में अगर ऑनलाईन या यू टूब द्वारा पढाई शुरू करे तो काव्यशास्त्र भाषा विज्ञान जैसे विषय में पहले परिभाषा सिखनी पडती है और बाद में अन्य सिध्दांत, पर यह ऑनलाईन शिक्षा प्रणाली द्वारा छात्र आसानी से समझ नहीं सकता, इसकारण ऐसे विषय को पढाते समय सामने छात्र हो तभी ऐसे विषय हम पढा सकते है।

एक अध्यापक कक्षा में कोई विषय पढाता है तो छात्र जब महाविद्यालय समाप्त होता है तब उस विषय पर अन्य छात्रों के साथ अपने अध्यापक के साथ गहन चर्चा करते है और उस विषय संलग्न अगर किसीके मन में कोई प्रश्न होते है तो एक दूसरे से चर्चा द्वारा उस विषय संलग्न गहन जानकारी छात्र हासील कर सकते है। उससे संलग्न कोई शोध भी कर सकते है। पर छात्र एक दूसरे से मिले बातचित करे यह बात तभी संभव है। ऑनलाईन से छात्र सिर्फ परीक्षा में उत्तीर्ण होने हेतू ही पढ सकता है उसे विषय संलग्न गहन ज्ञान नहीं मिल सकता क्योंकि उसके सामने न अध्यापक होगा न विषय संलग्न बहुत सारी जानकारी होगी।

मेरा तो यह भी अनुभव है की छात्र जीवन में जो बाते महाविद्यालय में छात्र सिखते है उससे कोसो दूर रहेंगे, छात्र सिर्फ अपना ही सोचेंगा छात्र जब महाविद्यालय में होता है तो उसे गाँव से शहर आते समय के अच्छे बुरे अनुभव लेता है। छात्र जीवन में एन.एस.एस., एन.सी.सी. छात्र संसद द्वारा एक दूसरे की सहायता करना यह सिखता है, समाज में क्या चल रहा है यह तो एक छात्र दूसरे छात्र से बात जब करेगातभी अच्छी तरह से समझ सकता है। इससे जीवन राह पर मार्गस्थ होते समय जो कठीनाई आती है उसे सूलझाने के लिए बहुत बार महाविद्यालय के अनुभव उचित साबित होते है।

छात्र घर में रहकर जब पढाई करता है तो सिर्फ अपने बारे में ही सोचता है, जो छात्र देश का भविश्य है उसे अगर घर मेंही सारी पढाई मिलने लगी तो वह समाज का एक अच्छा सहारा नहीं बन सकता क्योंकि उस नवयुवक को समाज में क्या अच्छा बुरा इसका ज्ञान नहीं होता, वह छात्र सिर्फ ऑनलाईन द्वारा पढता है और समाचार देखता है। पर देश के प्रती समाज के प्रती उसके मन में कोई भी प्रेम नहीं होगा। इसका बहुत बुरा परिणाम इस देशपर होगा।

ऑनलाईन शिक्षा हमने जब शुरू की तब कई छात्रों के माता पिता ने हमें कहा की एक छात्र मोबाईल के सामने कई घंटे बैठा रहे तो उसके आखों का क्या होगा। १९ से २१ साल के नवयुवक अगर इसतरह एक जगह बैठा रहा तो आखों के साथ साथ उसका शारिरिक विकास किसतरह होगा। हमने कहा पढाई के उपरांत उन्हे कुछ व्यायाम करने को कहिए। पर माता पिता ने कहा छात्र जो विषय नहीं समझा उसके उत्तर फिर इंटरनेट द्वारा धुंडते बैठता है, सारा दिन ऐसे ही समाप्त होता है। छात्र ने सुबह फोन हात में लिया की शाम तक वही चलता रहता है। इससे छात्र में मोटापा बढने जैसी समस्या भी बढने लगी है ऐसा भी कई माता पिता ने कहा।

मेरा अनुभव यह रहा है की कोविड-१९ के दौरान शिक्षण व्यवस्था में जो बदलाव आए उससे प्राथमिक शिक्षा से लेकर महाविद्यालय तक के छात्र सिर्फ एक जगह बैठकर दिनभर मोबाईल देखते है। परिणाम स्वरुप उनके आखोंका प्रश्न निर्माण हो रहा है। कई छात्रों के पास तो स्मार्ट फोन नहीं है कई लोगों ने बच्चे की पढाई न बंद पडे इस कारण ब्याज से पैसे लेकर स्मार्ट फोन लिया पर उस पिता ने कहा रेंज का बहुत बुरा हाल है हमारे गाँव में, करे तो क्या शासन एक तरफ कहता है की समाज के आखरी व्यक्ति तक शिक्षा जानी चाहिए पर यह ऑनलाईन द्वारा सफल नहीं हो सकता। शहरों में बैठकर ऑनलाईन शिक्षा शुरू करों कहना आसान है पर ग्रामीण इलाकों की हालात भी पहले देखने चाहिए। अध्यापक तो हर परिस्थिति में ऑनलाईन पढाने को तैयार है पर प्रश्न यह है की कोरोना महामारी में स्मार्ट फोन कई लोगों के पास नहीं है। ग्रामीण इलाकों में मोबाइल को रेंज नहीं इस कारण किसे शिक्षा मिलती है किसे नहीं जो पहले शिक्षा से दूर थे वह ऑनलाईन शिक्षा से भी दूर ही रह रहे है।

वर्तमान परिवेश में शिक्षा का गिरता हुआ स्तर

शोभा उपाध्याय

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“शिक्षा से मेरा अभिप्रायः बालक या मनुष्य के शरीर, मस्तिष्क या आत्मा के सर्वांगीण एवं सर्वोत्तम विकास से है।”

महात्मा गाँधी

सारांशः

आज पूरा विश्व कोविड-19 महामारी से जूझ रहा है। इसने पूरे विश्व को चौतरफा प्रभावित किया है जिससे शिक्षा जगत भी अछूता नहीं है। शिक्षा का वास्तविक अर्थ है- मनुष्य का सर्वांगीण विकास करना है। शिक्षा निरंतर चलने वाली प्रक्रिया है। यह औपचारिक तथा अनौपचारिक दोनों माध्यमों से प्राप्त होती है। आज शिक्षा का उद्देश्य बदल गया है सिर्फ कक्षा में पास होना या अच्छे अंक प्राप्त करना तक ही सिमट कर रह गया है। आज की शिक्षा बालक का सर्वांगीण विकास करने में असफल सिद्ध हो रही इसके बहुत सारे कारण या तत्व हो सकते हैं। इस पेपर का उद्देश्य शिक्षा के गिरते स्तर के कारणों पर प्रकाश डालना है।

प्रस्तावना:

किसी भी देश की प्रगति में शिक्षा व्यवस्था का महत्वपूर्ण स्थान होता है। शिक्षा समाज से प्रगति व विकास का प्रतीक है। समाज के परिवर्तन में शिक्षा व्यवस्था का महत्वपूर्ण स्थान होता है। क्योंकि समाज परिवर्तनशील है अतः शिक्षा में भी समय-समय पर संशोधन होना चाहिए अन्यथा शिक्षा और समाज की कड़ी टूट जाएगी। वर्तमान समय में शिक्षा के स्तर में गिरावट आई है। शिक्षा बालक के सर्वांगीण विकास में असफल हो रही है इसके बहुत से कारण हो सकते हैं। वर्तमान समय में तो कोविड-19 ने शिक्षा क्षेत्र को बहुत प्रभावित किया है। इस महामारी में लगातार कई महीनों तक स्कूल व कॉलेज बन्द हो गए तथा शिक्षा की ऑनलाइन व्यवस्था की गई। ऑनलाइन शिक्षा में प्राथमिक स्तर के बच्चों का आधार ही कमजोर कर दिया, शिक्षा माता-पिता व शिक्षक तक ही सिमट कर रह गई है। शिक्षक का कार्यभार बढ़ गया और माता-पिता की जिम्मेदारी भी, पर बालक को ज्ञान प्राप्त नहीं हो पाया क्योंकि पूरे समय मोबाइल या कम्प्यूटर की उपलब्धता संभव नहीं हो सकती थी, यह शारीरिक नुकसान के साथ-साथ मानसिक तनाव को भी जन्म देता है।

शिक्षा स्तर में गिरावट के कुछ मुख्य कारणः

- (1) शिक्षक व छात्र का सम्पर्क नहीं :- ऑनलाइन शिक्षा व्यवस्था में शिक्षक व छात्र का सम्पर्क नहीं हो रहा है जैसा कि विद्यालय में होता है। विद्यालय में शिक्षक छात्र पर पूरा ध्यान रखता है, शिक्षक को छात्र की कमजोरी तथा उसके गुणों का ज्ञान होता है जिसे शिक्षक अपनी प्रेरणा से बालक के विकास में परिवर्तन कर सकता है।
- (2) शिक्षकों की अयोग्यता:- शिक्षा में योग्य एवं समर्पित शिक्षक का अभाव है। यह भी देखा गया है कि दूसरे विषय में पारंगत शिक्षक दूसरे विषय को पढ़ाते हैं उन्हें अपने विषय से वंचित रखा जाता है। कुछ शिक्षक शिक्षण का कार्य सिर्फ जीवन निर्वाह हेतु करते हैं। उन्हें कोई मतलब नहीं होता है कि बालक का भविष्य क्या होगा।

- (3) **शारीरिक श्रम का अभाव:-** आधुनिक शिक्षा प्रणाली व बढ़ती दूरसंचार माध्यमों के प्रयोग से बालक का शारीरिक श्रम नहीं हो रहा है, उसमें बालक को निकम्मा व आश्रित बना दिया है।
- (4) **नैतिक मूल्यों का अभाव:-** बालक के लिए नैतिक मूल्यों की शिक्षा बहुत आवश्यक है ये बालक को अनुशासन व शिष्टाचार सिखाते हैं जिससे वह समाज के नियमों को सिखता है तथा उस पर चलता है पर वर्तमान शिक्षा जो कि विद्यालय के माहौल में नहीं दी जा रही है वह नैतिक मूल्यों को सिखाने में विफल हो रही है।
- (5) **अत्याधिक खर्चीली:-** वर्तमान में जो शिक्षा व्यवस्था है वह बहुत खर्चीली है। साधारण परिवार के लिए वहन करना मुश्किल है।
- (6) **माता-पिता के लिए संघर्ष की स्थिति:-** ऑनलाइन शिक्षा ने नई चीजों को शामिल किया है। जैसे हववहसम बसें. तववउए में.पहदउमदजए हववहसम वितउ आदि अतः माता-पिता इसे समझने, प्रयोग करने तथा बच्चों को समझाने के लिए अच्छी खासी संघर्ष करते हैं। इसे समझना या प्रयोग करना इतना आसान नहीं होता है।
- (7) **बालक का व्यर्थ का भटकाव:-** ऑनलाइन शिक्षा में बालक व्यर्थ के तत्वों में लगा रहता है उसे अगर कोई देखने वाला ना हो तो वह या तो सो जाएगा या फिर कुछ और अपने मतलब की चीज देखने लगता है।



निष्कर्ष:

ज्ञान प्राप्त करने का कोई भी माध्यम हो सकता है। चाहे वह ऑनलाइन हो या ऑफलाइन पर बालक के लिए विद्यालय वातावरण में दिये जाने वाली शिक्षा का स्थान कोई नहीं ले सकता है। शिक्षक छात्र का सम्बन्ध, शिक्षकों की अभिप्रेरणा, विद्यालय का अनुशासन, दोस्तों के साथ खेलकूद, यह सब परम्परागत शिक्षा व्यवस्था में ही हो सकता है। ऑनलाइन शिक्षा में यह मुमकिन नहीं है।

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कोव्हिड १९चा मानवी जीवनावर होणाऱ्या परीणामाचे अध्ययन

विजया कन्नाके

गृहअर्थशास्त्र विभाग,

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सारांश:

कोव्हिड १९या महामारीत सर्व सामान्य व्यक्तीच्या आचार विचारात अतिशय अमानविय बदल झालेला आढळतो. भारतीय समाज हा नितीमुल्य, संस्कार, अध्यात्मावर आधारित उभारलेला आहे. सामाजिक ऐक्याचे भारतीय संस्कृतीत जतन होतांना आढळते. परंतू आताच्या परीस्थितीने मात्र समाजाच्या नितीमुल्यांवर आघात झालेला आढळतो आहे. अतिशय संवेदनाशुण्य परीस्थिती निर्माण झालेली आढळते. माणुसकीला काळीमा फासणाऱ्या कृती अंगिकारतांना समाजात लोक वागतांना दिसत आहेत. या महामारीने समाजाच्या नितीमुल्यांची पायमल्ली झाल्याचे आढळत आहे. समाजात पुन्हा भेद निर्माण झाल्याचे आढळते त्या शिवाय पुढेही हा भेद तसाच राहतो की काय याची शंका येवू लागत आहे. या महामारीने सतत भितीचे वातावरण निर्माण झाले आहे. कोरोनाग्रस्त व्यक्तीकडे बघण्याचा दृष्टिकोन बदला आहे. जणू काही खुप मोठा अपराध त्याच्या हातून घडला असल्याचे चित्र दिसत आहे. व्यक्ती व्यक्तीत दुरावा निर्माण झाल्याचे आढळते. कोरोना ग्रस्त कुटुंबाकडे समाजात वाईट नजरेने बघितल्या जात आहे. कोरोना महामारीतुन बाहेर आल्यावरही त्यांना वागणुक वाईट दिल्याचे आढळते.

प्रस्तावना :

कोरोना विषाणूंचे अनेक प्रकार असून त्यातील ७ प्रकारच्या विषाणूंच्या संसर्गाने मानवाला बाधा होण्याची शक्यता जास्त असते. नविन कोरोना चा विषाणू हा सार्सच्या जवळचा असल्याचे संशोधकांच्या विश्लेषणात आढळले. २००२ मध्ये चीनच्या ८०९८ लोकांना सार्सचा संसर्ग झाला असता ७७४ मृत्यू झाल्याचे आढळले. सार्स हा मांजराद्वारे माणसात संक्रमित झाला होता. परंतू आताच्या कोरोनाचा मुळ स्रोत अजूनही माहिती पडलेले नाही. कोव्हिड २०१९ या महामारीने सर्व जगतात खळबळ उडवून दिल्याचे सर्वांनाच माहिती आहे. बरेच मृत्यूंचे पूमाण वाढण्याचे मुळ कारण आहे आहे भिती व प्रतिकारक्षमता कमी असणे.

नॉटिंगम युनिवर्सिटीत वायरोलॉजीचे प्राध्यापक जोनाथ बॉल यांच्या मते : "विषाणूचा प्राण्यांच्या एका प्रजाती कडून दुसऱ्या प्रजातीत संक्रमित झाल्यानंतर मानवालाही संक्रमित होतो असे मत व्यक्त करण्यात आले. "१

या विषाणूंच्या संसर्गामुळे भिती, चिंताग्रस्तता, अशांतता, असुरक्षितता, दडपण, ताणतणावाचे प्रमाण वाढलेले आढळले. डब्ल्यु एच. ओ ने ११ मार्च २०२० पासून जागतिक महामारी घोषित करण्यात आली. या महामारीत सर्वप्रथम स्टेज मध्ये वृद्ध, मधुमेह, ब्लडप्रेसर, दमा असणाऱ्या व्यक्ती संक्रमित झाल्याचे आढळले. तर दुसऱ्या स्टेज मध्ये तरुण वर्गातील व्यक्ती जास्तीत जास्त संक्रमित झाल्याचे आढळले. या महामारीपासून बचाव करण्याकरीता सोशल डिस्टन्सिंग, मास्कचा वापर, वारंवार हात धुणे यासारखी काळजी घेणे गरजेचे असल्याचे सांगण्यात आले. हा व्हायरस प्रचंड वेगाने पसरत असल्या कारणाने सर्व जगभरात टाळेबंद घोषित करण्यात आले. कामाव्यतीरीक्त घराबाहेर पडण्यावर मज्जाव करण्यात आला. त्यामुळे प्रसार रोखण्याकरीता बाजार, दुकाने, बगिचा, उद्याने, हेल्थक्लब, उपहारगृह, सिनेमागृह, धार्मिकस्थळ, शाळा, महाविद्यालये बंद ठेवण्यात आले. त्याकारणाने आर्थिक, राजकीय, सामाजिक व्यवहारावर विपरीत परीणाम झालेला आढळला. एकुणच सर्वसामान्य जीवनमान बदलून गेल्याचे आढळते.

अर्थ व्यवस्था :

महामारीमुळे जागतिक व स्थानिक पातळीवर परीणाम झाल्याचे निदर्शनात आले १५ अब्ज डॉलर्स चा तोटा जागतिक अर्थव्यवस्थेला झाल्याचे निदर्शनात आले. गाड्यांचे सुटे भाग, औषधांकरीता लागणारा कच्चा माल, पर्यटन व वाहतूक क्षेत्र, तीर्थक्षेत्र, खाद्यपदार्थांशी संबंधीत व्यवसाय, शॉपिंग मॉल, कृषी क्षेत्र या व्यवसायांना मंदी आलेली आढळते. अनेक उद्योगधंदे बंद पडण्याच्या मार्गावर आहेत. वस्त्र, यंत्रमाग, इंजिनिअरींग इंडस्ट्रीज, आयटी सर्व्हिसेस या उद्योगांवर देखिल अंधाराचे सावट असल्याचे आढळते. हातगाडीवाला, रिक्षावाला, टॅक्सीवाला, खेळणी विकणारे, चहावाला, बेटर, गॅरेजवाला, भंगार जमा करणारे, बांधकाम क्षेत्रात देखिल परीणाम झालेला आढळतो. या कोरोनाच्या काळात फक्त किराणा स्टोर्स, भाजीपाला, फळ विक्रेते, मेडीकल स्टोअर्स, दवाखाणे या व्यवसायाला महत्व प्राप्त झाले. बाकी व्यवसाय ठप्प झालेत त्यामुळे बरेच छोटेखाणी व्यवसायीकांना जबरदस्त फटका सहन करावा लागला. लोकांना उपारमारीला सामोरे जावे लागले. दिशाहीन जनता झाल्याचे चित्र सतत निदर्शनात येत आहे.

घोषवाक्य : मानवी जीवन, समस्या, होणारा परीणाम

उद्दिष्टे :

१. कोरोना काळातील सामाजिक समस्यांचा अभ्यास करणे
२. कोरोना काळातील आर्थिक अडचणी जाणून घेणे
३. कोरोना काळातील दैनंदिन जीवनावर होणाऱ्या परीणामांचे अध्ययन करणे

गृहितके :

१. सामाजिकतेच्या नितीमुल्यांचा न्हास झाला.
२. जनसामान्यांच्या दैनंदिन जीवनावर प्रचंड प्रभाव पडला.
३. माणुसकी, भावनात्मक परिवर्तन झाले.

नमुना निवड : भंडारा शहराची निवड करण्यात आली.

मर्यादा : प्रस्तुत संशोधन हे भंडारा शहरा पुरतेच मर्यादित करण्यात आले.

तथ्यसंकलनाकरीता भंडारा शहरातील ५० लोकांचा अभ्यास करण्यात आला.

संशोधन पूर्व आढावा :

१. देशात आयटी सेक्टरला बंदमुळे नुकसान झाले, चीन मधुन येणारे गाड्यांचे सुटे भाग, औषधांचा कच्चा माल यांच्या अभावाने वाहन व औषध व्यापारावर वाईट परीणाम झाल्याचे आढळले. पर्यटन क्षेत्र, वाहतुक क्षेत्र, कृषी क्षेत्र, पोल्ट्रीफॉर्म या व्यवसायाला मंदी आली आहे. चहावाला ते भंगार विकणाऱ्यापर्यंत नुकसान सहन करावा लागला. बेकारी वाढल्याने जनसामान्यांना प्राथमिक गरजा भागविणे कठीण होवून बसले आहे.
२. डॉ. हर्षद भोसले : भारत हा सांस्कृतिक देश असल्याने लोकसमुदायात माणुसकी, आपुलकी, दयाभाव, प्रेम, मदत, करुणा, सहानुभुती या मुल्यांची रूजवणुक झाली असतांना कोरोनामुळे समाजात नातेसंबंधात दुरावा, संक्रमिताकडे बघण्याचा वाईट दृष्टिकोण तिटकारा, भेदभाव निर्माण झाल्याचे चित्र दिसत आहे. डॉक्टर, नर्सस, पोलिस, कचरा साफसफाई कामगार यांचे कार्य अविरत सुरु असल्याने यांना संसर्ग झाल्यावर समाजाने मात्र त्यांच्या कार्याची दखल न घेता त्यांच्यावर निंदनीय वागणुक दिल्याचे वाईट कृत्य घडल्याचे आढळले. माणुसकीचा अधःपात झालेला आढळतो, शेजारी व नातेवाईक असंवेदनशील झालेत. माणुस आत्मकेंद्री विवेकशून्य, असामाजिक झाला आहे. माणसाचे नैतिक मुल्य, श्रद्धा, नागरी व्यवहार, सार्वत्रिकव्यवहाराचे आदर्शतत्व, न्यायतत्व सांशकीत झाल्याचे आढळते.

३. कोरोना मुळे लहान मुलांच्या शारीरिक, सामाजिक, भावनिक व मानसिक विकासावर परीणाम झाल्याचे आढळले. ६५ टक्के बालकांना मोबाईलचा छंद लागला. त्यामुळे ६५.२ टक्के बालकांना शारीरिक समस्या, २३.४० टक्के स्थुलता, २६.९० टक्के डोकेदुखी, २२.४० टक्के मुलांना डोळ्यांचे त्रास, ७०.७० टक्के मुलांमध्ये वर्तणुकीत बदल, २३.९० टक्के मुलांनी दैनिक सवयी सोडल्यात, २०.९० टक्के मुले निष्काळजी वृत्ती निर्माण झाली, ३६.८० टक्के मुले हट्टी, १७.४० टक्के बैचेन असल्याचे आढळले.

संशोधन पध्दती :

संशोधनाकरीता ऑनलाईन सर्वेक्षणाचा वापर करण्यात आला. प्राथमिक तथ्य संकलनाकरीता संरचित प्रश्नावलीचा वापर करण्यात आला. दुय्यम तथ्य संकलनाकरीता वर्तमानपत्रे, संकलित लेख, पुस्तके, इंटरनेटवरील माहितीचा समावेश करण्यात आला. प्रस्तुत संशोधनाकरीता भंडारा शहराचा नमुना म्हणुन समावेश करण्यात आला. यादृच्छिक पध्दतीने नमुना निवड करण्यात आली. कोरोना काळातील सामाजिक मदत करण्याबाबत माहितीदर्शक तालिका क्रं. १

अ. क्र.	सामाजिक मदतीचा प्रकार	वांस्वारीता	प्रतिशत
१	देणगी .	०६	१२
२	अन्न वाटप	०४	०८
३	मास्क वाटप	०२	०४
४	मास्क, सॅनिटायजरचे महत्व पटवून सांगणे	०४	०८
५	सॅनिटायजर वाटप	०२	०४
६	कोरोनाग्रस्त कुटुंबाला आवश्यक वस्तूंचा पुरवठा करणे	०६	१२
७.	काहीच न करणे	२६	५२
	एकुण	५०	१००

कोरोना काळात सामाजिक जाणिव ठेवून मदत करण्यांचे प्रमाण हे कमी आढळले. काही प्रमाणात मदत करण्यास तप्तर असल्याचे देखिल आढळले.

कोरोना काळातील समस्याबाबत माहितीदर्शक तालिका :क्रं. २

अ. क्र.	समस्यांचे प्रकार	वांस्वारीता	प्रतिशत
१	आरोग्या बाब	२३	४६
२	पैश्याबाबत	१७	३४
३	शिक्षणाबाबत	१०	२०
४.	इतर	००	००
	एकुण	५०	१००

वरील तालिकेवरून असे निदर्शनात येते की, आरोग्याबाबतच्या समस्या जास्त प्रमाणात आढळल्या. आर्थिक टंचाई, शिक्षणाबाबतच्या समस्या देखिल आल्याच्या आढळले.

कोरोना काळातील समाजातील वागणूकीबाबत माहिती दर्शक सारणी : क्रं. ३

अ. क्र.	समाजिक वागणुकीचा प्रकार	वांरवारीता	प्रतिशत
१	कोणी घरी येवू न देणे	११	११
२	कोणी प्रकृती बिघडल्यास मदत करत नव्हते	१०	१०
३	दुरुन बोलणे	०८	१६
४	नातेवाईकांमधे दुरावा निर्माण झाला	०५	१०
५	शेजारचे लोकांनी बोलणे बंद केले	०६	१२
६	कोणी कोणाशी संबंध ठेवत नाहीत	१०	२०
	एकुण	५०	१००

वरील तालिकेवरून असे निदर्शनात येते की, कोरोना काळात लोकांच्या वागणुकीमधे बदल झाल्याचे आढळले. सामाजिक नितीमुल्यांचे खच्चीकरण झाल्याचे आढळले. शेजारधर्म आता पाळला जात नाही. अनोळखीपणा निर्माण झाल्याचे आढळले. ऐकमेकांच्या सुखदुःखःत सामिल होण्याचे प्रमाण कमी आढळले. घरी येवू न देणाऱ्यांचे प्रमाण सर्वात जास्त ११ टक्के आढळले. कोरोना संसर्ग होण्याच्या भितीने इच्छा असूनही कोणी कोणाला मदत करू शकत नव्हते. संसर्ग झाल्यास शेजारचे लोकांनी बोलणे बंद केल्याचे आढळले. लग्न असो वा मरणाचा प्रसंग ऐकमेकांच्या घरी जाण्याचे टाळण्याचे प्रमाण १० टक्के जास्त आढळले. तर कोणाशी संबंध न ठेवाणाऱ्यांचे प्रमाण १० टक्के आढळले.

कोरोना काळातील समाजिक समस्यादर्शक सारणी क्र. ४

अ. क्र.	समाजिक समस्यांचे प्रकार	वांरवारीता	प्रतिशत
१	नातेवाईकांशी दुरावा निर्माण झाला	१०	२०
२	शेजारींशी दुरावा निर्माण झाला	१२	२४
३	घरातील व्यक्तीत दुरावा निर्माण झाला	०८	१६
४	वरील सर्व समस्या असणारे उत्तरदाते	२०	४०
	एकुण :	५०	१००

वरील तालिकेवरून असे निदर्शनात येते की, २० टक्के उत्तरदात्यांनी नातेवाईकांशी दुरावा निर्माण झाल्याचे मत दर्शविले, २४ टक्के उत्तरदात्यांनी शेजाऱ्यांशी दुरावा निर्माण झाल्याचे सांगितले, १६ टक्के उत्तरदात्यांनी घरातील व्यक्तींशी दुरावा निर्माण झाल्याचे सांगितले, ४० टक्के उत्तरदात्यांनी सर्वच बाबतीत दुरावा समाजात निर्माण झाल्याचे आढळले.

कोरोना काळातील मानसिक समस्यादर्शक तालिका : क्र. ५

अ. क्र.	मानसिक समस्यांचे प्रकार	वांरवारीता	प्रतिशत
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१	एकटेपणा जाणवला	१०	२०
२	कारोनाची लागण होण्याबाबतचा ताण	१८	३६
३	चीडचीड	१०	२०
४	सतत भीतीचे दडपण	१२	२४
	एकुण :	५०	१००

वरील तालिकेवरून असे निदर्शनात येते की, या महामारीत शासनाच्या कडक निर्बंधामुळे मानसिकतेत बदल झाल्याचे जाणवले. संसर्ग होण्याच्या भितीने किंवा संसर्ग झाल्याने कोणी कोणाला मदत करू शकत नसल्याने एकटेपणा जाणवणाऱ्यांचे प्रमाण १० टक्के आढळले. संसर्ग होण्याबाबतचा ताण ३६ टक्के आढळला. त्यामुळे चीडचीड निर्माण होण्याचे प्रमाण १० टक्के आढळले. तर सतत भीतीच्या दडपणाखाली वावरणाऱ्यांचे प्रमाण २४ टक्के आढळले.

कोरोना काळातील आर्थिक समस्या दर्शक सारणी : क्र. ६

अ. क्र.	आर्थिक समस्यांचे प्रकार	वांरवारीता	प्रतिशत
१	खर्च भागविणे अशक्य	१०	२०
२	किराणा भाजीपाला खरेदीची समस्या	१३	२६
३	व्यवसाय बंद पडल्याने तोटा सहन करावा लागला	१५	३०
४	दवाखाण्याचा खर्च करणे अशक्य	१२	२४
	एकुण :	५०	१००

वरील सारणीवरून असे निदर्शनास आले की, व्यवसाय बंद पडल्याने तोटा सहन करणाऱ्यांचे प्रमाण ३० टक्के आढळले, किराणा व भाजीपाला खरेदीसंबंधीच्या समस्या येणाऱ्यांचे प्रमाण २६ टक्के जास्त असल्याचे आढळले, २४ टक्के लोकांना दवाखाण्याचा खर्च करणे अशक्य असल्याचे आढळले.

निकर्ष :

१. कोरोना. १९ या महामारीचे प्रस्थ वाढतच असल्याने शासनाने लॉकडाउन घोषित केल्याने बऱ्याच लोकांना अनेक समस्या निर्माण झाल्याचे आढळले. सर्व जीवन विस्कळीत झाल्याने हातमजुरी करणारे कारकुन, व्यावसायिक यांना आर्थिक समस्यांना सामोरे जावे लागले. सामाजिक सेवा करण्याच्या उद्देशाने बऱ्याच सामाजिक सेवाभावी संस्थांनी जनतेला मदत करण्याचा प्रयत्न तर केलाच परंतु सामान्य व्यक्तींनी देखिल कोरोनाची जनजागृती करून आवश्यक सेवा, माहितीद्वारे मदत करण्यास पुढे आलेत. परंतु समाजसेवा देणाऱ्यांचे प्रमाण मात्र कमी आढळले.
२. कोरोना काळातील सामाजिक वागणुकीबाबत अध्ययन केले असता घरी येवू न देणे मत व्यक्त करणारे १२ टक्के आढळले. प्रकृती बिघडल्यास मदत करत नव्हते असे मत व्यक्त करणारे उत्तरदाते १० टक्के आढळले, दुरुनच बोलण्यात येत

असल्याचे मत व्यक्त करणारे १६ टक्के आढळले, नातेवाईकांमधे दुरावा निर्माण झाल्याचे मत मांडणारे १० टक्के आढळले, शेजारचे लोकांनी बोलणे बंद केल्याचे मत मांडणारे १२ टक्के आढळले. कोणी कोणाशी संबंध ठेवत नसल्याचे मत दर्शविणारे २० टक्के आढळले. सामाजिक नितीमुल्यांची पायमल्ली होतांना आढळत आहे. माणुसकीचा न्हास झाल्याचे चित्र दिसत आहे.

३. नातेवाईकांशी दुरावा निर्माण झालाचे २० टक्के उत्तरदात्यांनी मत व्यक्त केले. शेजारींशी दुरावा निर्माण झाल्याचे २४ टक्के मत व्यक्त करण्यात आले. घरातील व्यक्तीत दुरावा निर्माण झाल्याचे १६ टक्के मत दर्शविण्यात आले. वरील सर्व समस्या असणारे उत्तरदात्यांनी ४० टक्के मत दर्शविले.
४. मानसिक समस्यांचे अध्ययन केले असता ऐकतेपणा जाणवणारे २० टक्के मत दर्शविण्यात आले. कोरोनाची लागण होण्याबाबतचा ताण असण्याबाबतचे मत व्यक्त करणारे ३६ टक्के प्रमाण आढळले, चीडचीड होण्याचे मत व्यक्त करणारे २० टक्के आढळले, सतत भीतीचे दडपण असल्याचे मत दर्शविणारे २४ टक्के आढळले. सतत मानसिक दडपणामुळे बरेच संक्रमित होण्यास कारणीभूत असल्याचे आढळले. भीती, दडपण, ताण या कारणाने मृत्युंची संख्या वाढल्याचे आढळते.
५. आर्थिक समस्यांचे अध्ययन केले असता खर्च भागविणे अशक्य असणारे २० टक्के प्रमाण आढळले, किराणा भाजीपाला खरेदीची समस्या असणारे २६ टक्के आढळले, व्यवसाय बंद पडल्याने तोटा सहन करावा लागला असे मत दर्शविणारे ३० टक्के आढळले तर दवाखाण्याचा खर्च करणे अशक्य असण्याचे मत दर्शविणारे २४ टक्के आढळले. लॉकडाउन मुळे आर्थिक संकटांना सामोरे जावे लागत असल्याचे चित्र दिसत आहे. मजुर, कारागिर यांना सर्वात जास्त आर्थिक फटका बसल्याचे आढळले, बेरोजगारी वाढत असल्याचे आढळते.

शिफारसी :

१. सामाजिक मुल्यांचा नाश होवू नये याकरीता समाजात या महामारीबाबत योग्य माहिती पुरविणे गरजेचे आहे. प्रेमाच्या बोलण्याने, संवाद साधल्याने, संक्रमिताचे मानसिक बळ वाढविण्याचा प्रयत्न केल्यास व्हिल पॉवर, इम्युनिटी वाढवण्यास मदत होवून रोगी लनकर बरा होवू शकतो याबाबत समाजात जाणिव करून देणे गरजेचे आहे. सहानुभूती, प्रेम, आपुलकी, सेवाभाव या मुल्यांची जोपासणा केल्याने या रोगावर विजय मिळविता येवू शकतो हे पटवून सांगणे गरजेचे आहे. .
२. सामान्य व्यक्तीकडे बघण्याचा दृष्टीकोन कलुषित झाल्याचे आढळते. शेजाऱ्यांनी बोलणे बंद केले, नातेवाईक संबंध ठेवण्याचे टाळत असल्याचे आढळले, कोणी कोणाला घरी बोलावण्यास टाळत असल्याचे आढळले. सामान्यांना पटवून सांगणे गरजेचे आहे. बोलण्यातून संसर्ग हा पसरत नसून त्यामुळे आजारी व्यक्तीचे मनोबल वाढण्यास फायदेशिर ठरते. मृत्युच्या दारेतून बाहेर काढण्यास प्रेमाचे बोलणे उत्तम औषध ठरू शकते.
३. कोरोना महामारीने सर्वत्र आपले रूद्र रूप प्रगटीत केल्याने मानवी जीवनावर सर्वच बाजूने प्रहार झालेला आढळतो. मानसिक, भावनिक, सामाजिक, आर्थिक, नैतिक, शारीरिक, आरोग्य या सर्व दृष्टिने परीणाम झाला आहे. माणुसकीला काळीमा फासणारे अनेक घटना घडलेल्या आहेत. कोरोना संक्रमित कुटुंबातील सदस्य आढळल्यास एकदा दवाखाण्यात भरती केल्यावर त्याचे नातेवाईक पुन्हा येवून पाहत नव्हते, तसेच मृत्यु झाल्यावर शेवटले अंतिम दर्शन करण्यास किंवा अंतिम संस्कार करण्यास कुटुंबातील सदस्य येत नव्हते. इतकी दहशत कोरोनामुळे पसरलेली आढळते. अश्या प्रकारची वागणूक सामाजिकतेच्या दृष्टिने व नैतिक मुल्यांवर आघात करणारी आहे. जीवनमुल्यांना मोडीत काढणारी परीस्थिती निर्माण झालेली आढळते. तेव्हा विविध प्रसारमाध्यमांद्वारे सामाजिक मुल्यांना धक्का लागणार नाही अश्या बातम्या पसरवित

असणान्यांवर कडक कारवाई करण्यात यावी. जनतेला भडक बातम्या रंगवून सांगण्यात येत असल्याने अधिक मन क्लुषित होतांना आढळते. महत्वाचे नियम पाळल्यास नातेसंबंधात दुरावा निर्माण होवू न देता देखिल मानसिक ताणाचे प्रमाण कमी झाल्यास प्रतिकारक्षमता वाढण्यास मदत होईल. सकारात्मक मानसिकतेत बदल करणे गरजेचे आहे. त्यामुळे कोरोनावर मात करण्यास मनाची शक्तीच फायदेशिर ठरतांना आढळते.

४. मानसिकता सुदृढ असल्यास कोरोना या महामारीतुन बरेच संक्रमित मृत्युच्या दारातुन बाहेर आल्याचे आपण ऐकले आहे. मानसिकतेत बदल करण्यास कुटुंब, नातेवाईक, शेजारी, मित्रपरीवार यांची भुमिका अतिशय मोलाची ठरते. संक्रमिताला सहानुभूती, प्रेमाच्या बोलण्यातून त्यांचे मानसिक बळ वाढविण्याचा प्रयत्न केल्यास निश्चितच मनोबल वाढल्याचे मरणाच्या दारातून परत येण्यास मदत होवू शकेल. समाजातिल इतर नागरिकांनी अश्या पध्दतीने सहकार्याची भावनेची जोपासना करणे गरजेचे आहे. मदतीची भावना ठेवण्याची गरज आहे.
५. आर्थिक नुकसान या महामारीमुळे बरेच झालेले आहे. शासनाकडूनही बरीच मदत केली जात आहे. श्रीमंत वर्गाने लोकांच्या प्राथमिक गरजा भागविण्याच्या दृष्टिने प्रयत्न करणे गरजेचे आहे. काही समाजसेवा संस्था विविध उपक्रमांद्वारे मदत करण्यास प्रयत्नशील आहे. पण हे बोटार मोजण्या इतपत लोकं दिसतात. दानधर्म करण्याची इच्छा निर्माण होण्याची गरज आहे. आधीच्या काळात राहणीमान साधी होती परंतु आताची जीवनशैली बदलल्या मुळे पैश्याला महत्व वाढल्याने जोतो पैसा कमविण्याच्या मागे लागला आहे व मानुसकी, आपले सामाजिक कर्तव्य विसरत चालला आहे. करीता सामाजिकतेचे भाण ठेवणे गरजेचे आहे.

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