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Impact of COVID-19 in India and its effects on different sectors of Indian Economy and it's relation to the second-largest Post Independence Mass Migration of people

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ABSTRACT

COVID-19 pandemic is subjected to be the most pivotal worldwide health crisis of the century, and the biggest threat since 2nd World war, for the human population. It emerged in Wuhan, Hubei (China) in 2019 December. The causal virus of COVID-19 is SARS-CoV-2 (Severe Acute Respiratory Syndrome Corona Virus 2). According to a report by WHO (World Health Organization), COVID-19 has currently affected almost 6.2 Million people worldwide and more than 370,000 people have died. (Stats updated till 31st May 2020, 19:15 PM) No clinically proven vaccine has been designed for it yet. It has spread among the world very quickly disturbing the world's economy and life-style drastically and accordingly ruining it. Currently, all the nations are concerned with people's safety and have provided for their treatment and established lockdown to flatten the curve of cases. This paper studies the major impacts COVID-19 had on Indian Economical Sectors and how it lead to India's second largest mass migration of people since post-Independence.

Keywords— Active Pharmaceutical Ingredients, Micro, Small and Medium Enterprises, Severe Acute Respiratory Syndrome Corona Virus 2, World Health Organization

1. INTRODUCTION

Pandemics are defined as global health crisis which affect and set off major catastrophe in social and economic balance throughout the world, also initiating political calamity (Indranil and Prasenjit, 2020). COVID-19 is not the only pandemic faced by the human population; there have been no less than five pandemics in this century, namely:

- H1N1 (2009)
- Polio (2014)
- Ebola (2014, West Africa)
- Zika virus (2016)
- Ebola (2019, Democratic Republic of Congo)

And COVID-19 (2019, China) being the sixth.

These have caused a huge socio-economic disruption and caused major fatalities and morbidities (Allocati et al., 2016; Fan et al., 2019). Declared a pandemic by WHO (World Health Organization) on March 11, 2020, coronavirus 2019 has taken up a huge toll on the earth (World Health Organization, 2020). Coronavirus is a family of viruses that cause mild to moderate upper-respiratory tract infection, which is quite usual to the common cold. Over these past two decades, 3 new strands of coronavirus have popped out of animal reservoirs which have caused a huge effect of worldwide killing & illness. A hefty lot of corona viruses have been discovered, of which maximum revolve among animal reservoirs such as cats, pigs, bats & camels.

A spillover is an event, which happens when these viruses jump over to a human from an animal reservoir & cause illness. Seven strands of coronavirus are mainly known to cause illness & maybe fatal, out of those 7 strands which are known to affect people, only four causes meek to modest disease (NIAID, 2020). The other 3 are known to generate severe or rather fatal illness.

The three strands are:

- Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV):
 - This popped up in November 2002 & caused severe acute respiratory syndrome & then the virus vanished by 2004.
 - Affected 800 people and killed 774 people (World health Organization, 2004).

- Middle-East Respiratory Syndrome Coronavirus (MERS-CoV):
 - Sprung up in 2012 in the Middle-East, it was a spillover from the animal reservoir (namely from camels) & it continues to generate sporadic & localized outbreaks.
 - Affected 2494 people and killed 858 people (World Health Organization, 2013).
- SARS-Cov-2:
 - It is the third novel corona virus to pop up in this century.

Appeared in 2019 December in Wuhan, China, was soon declared a pandemic. It causes coronavirus disease 2019 (COVID-19). It is a single stranded RNA virus of 80nm to 120nm width of diameter. It was termed SARS-CoV-2 by International Committee on Taxonomy Viruses (ICTV) (Gorbalenya et al., 2020). Most preliminary case of COVID-19 in the world was reported from Seafood Wholesale Market in Hubei (Wuhan) (Huang et al., 2020). After that, it spread around the world very quickly, except for infecting in Antarctica.

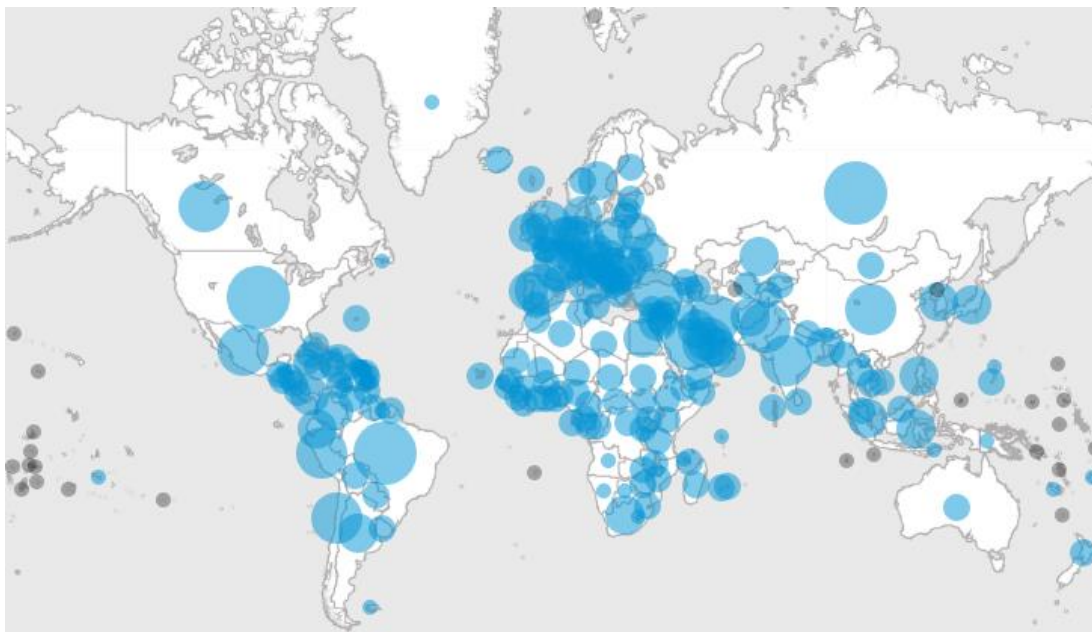


Fig. 1: Image depicting current spread of COVID-19 around the countries
(Source: WHO, 2020, Accessed date: 30 May 2020)

Compared to other pandemics, COVID-19 causes much more human suffering and disruption in the whole world, and it is rising steadily.

*Data updated to May 31, 2020, 19:15 GMT

Table 1: Dashboard for statistics of COVID-19 cases in India and Worldwide.

Area	Confirmed Cases	Recovered	Deaths	Active Cases
Worldwide	6,200,397	2,762,859	371,748	3,065,790
India	1,89,964	89,984	5,429	89,706

2. REVIEW OF LITERATURE

India’s first case of COVID-19 was detected in Kerala’s Thrissur area on 30th January 2020, as a student came back from Wuhan University [China] (Rawat and Mukesh, 2020). As on 31 May 2020; 19:15 PM, The Health Ministry of India has confirmed 1, 89, 964 cases and death toll has increased to 5,429. A graphical representation of the current status of COVID-19 in India:

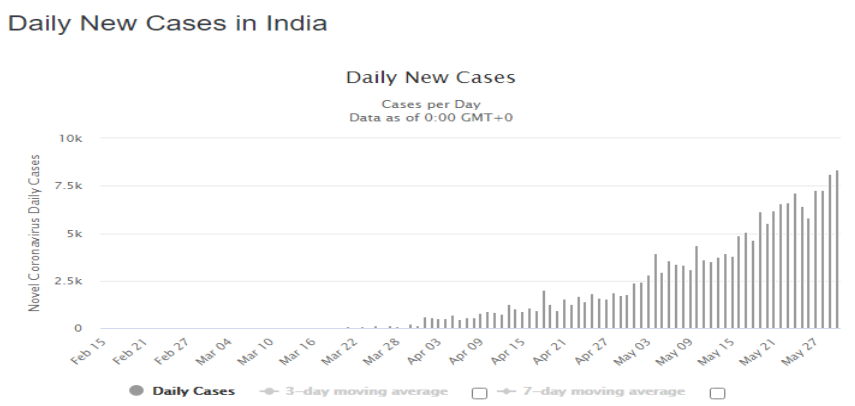


Fig. 2: Graphical data of daily cases of COVID-19 in India.
(Source: Worldometer, 2020; accessed date: 31 May 2020)

Active Cases in India

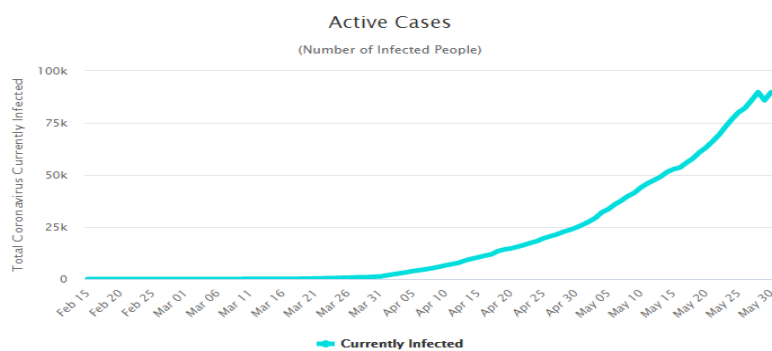


Fig. 3: Graphical data of Active cases of COVID-19 in India
(Source: Worldometer, 2020; Accessed date: 31 May 2020)

Total Coronavirus Deaths in India

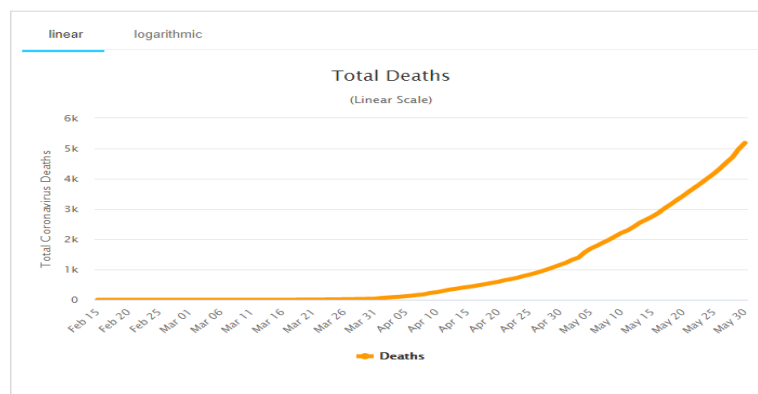


Fig. 4: Graphical representation of Total Deaths because of COVID-19 in India
(Source: Worldometer, 2020; accessed date: 31 May 2020)

Total Coronavirus Cases in India

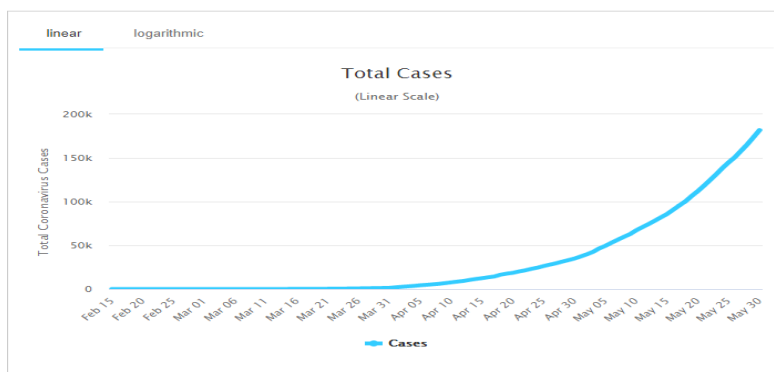


Fig. 5: Graphical representation of Total cases of COVID-19 in India
(Source: Worldometer, 2020; accessed date: 31 May 2020)

Daily New Deaths in India

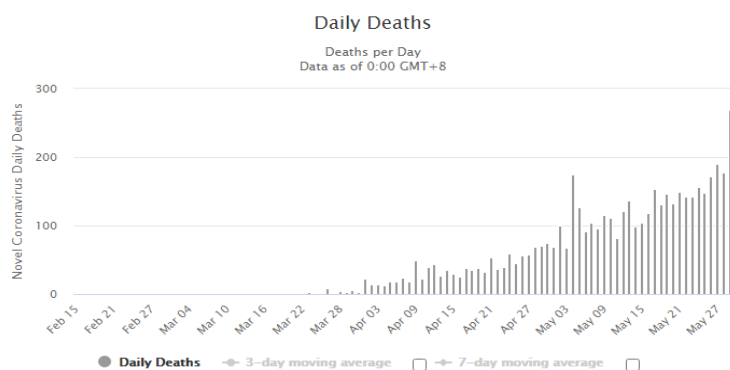


Fig. 6: Graphical representation of Daily cases of COVID-19 in India
(Source: Worldometer, 2020; accessed date: 31 May 2020)

Newly Infected vs. Newly Recovered in India

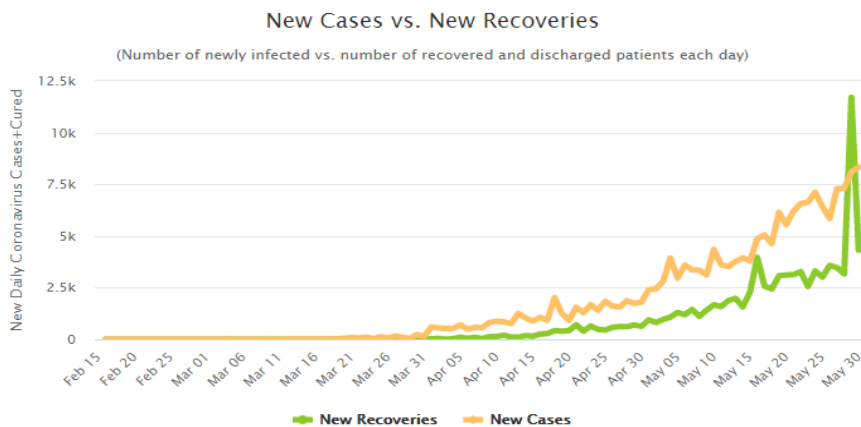


Fig. 7: Graphical representation of recoveries vs. cases of COVID-19 in India
(Source: Worldometer, 2020; accessed date: 31 May 2020)

Outcome of Cases (Recovery or Death) in India

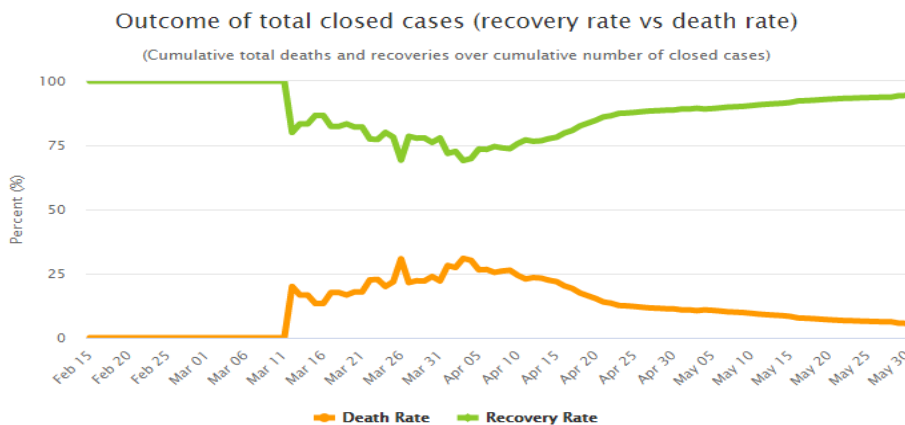


Fig. 8: Graphical representation of outcome of cases of COVID-19 in India
(Source: Worldometer, 2020; accessed date: 31 May 2020)

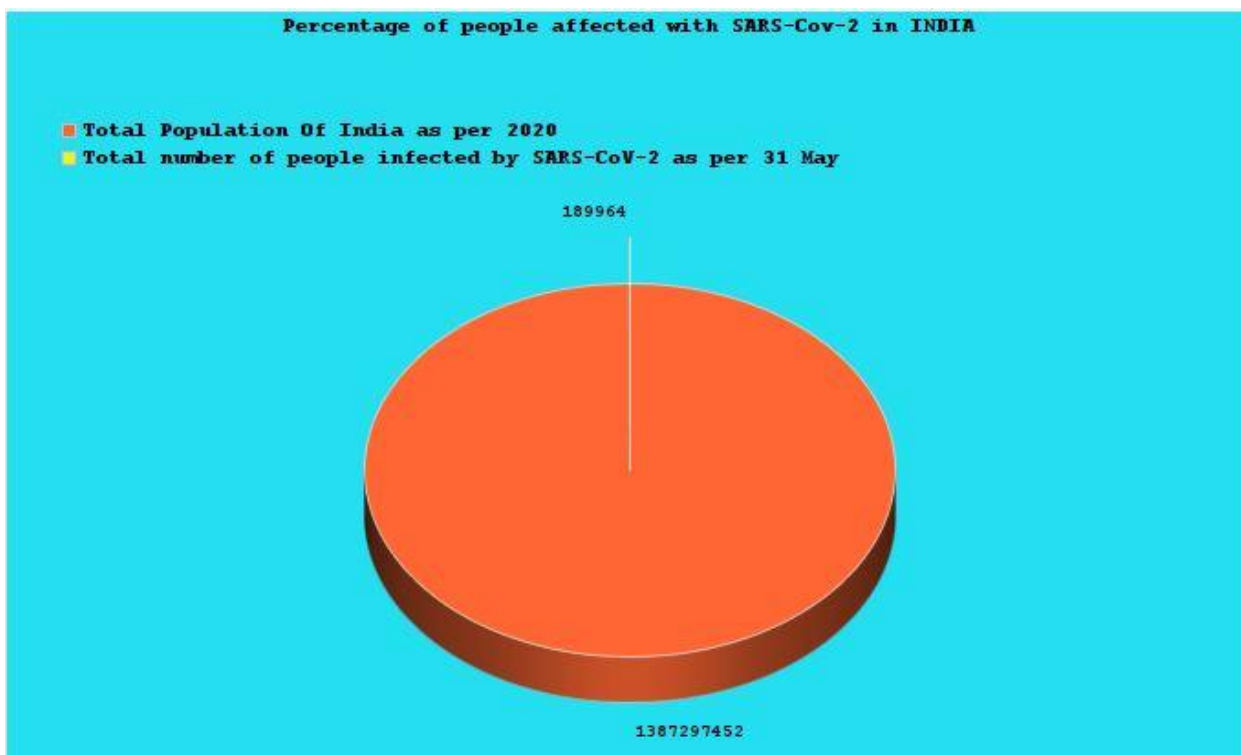


Fig. 9: Graph created by using onlinecharttool. This graph indicates the amount of people affected by COVID-19 out of all the total population in INDIA

Also, a huge tally of disruption of economy has taken place in India because of this COVID-19 which has adversely affected almost all the sectors. GDP of India has decreased by a wide margin and people have become unemployed as companies are starting to run out of money. This has caused a rise in unemployment rate in India, which ultimately forced many workers and laborers to return to their respective homes and states. Also, a huge number of stranded students and tourists in different parts of India have been brought back home. This huge Mass Migration has also become a hot topic.

Studying about the impact of COVID-19 in different sectors of India:

- Impact of COVID-19 on Indian Medical & Healthcare Sector
- Impact of COVID-19 on Indian Pharmaceutical Sector.
- Impact of COVID-19 on Indian Economic Sector.
- Impact of COVID-19 on Indian Social Sector.

All these sectors are equally important in uplifting the socio-economic stature of India and will be studied in detail.

3. IMPACT OF COVID-19 ON INDIAN MEDICAL AND HEALTHCARE SECTOR

Coronavirus has affected almost all the sectors. Talking about Medical Sector and Healthcare Sector. According to PARIJAT GHOSH (Partner, Bain & Company):

This is not only a health or human crisis; it has already affected multiple aspects of human life.

Standard crisis management playbooks are likely to be insufficient in addressing the implications of this change.

- Healthcare ecosystem would evolve in a few different directions at a very rapid pace.
 - Decisions taken in months & years are being accelerated.
 - Organizations have to stay ahead of all these above changes.
 - We might see a short sharp contraction followed by a rapid recovery of economic activity.
 - Rapid uptake of Telemedicine, Digital Health will happen, along with enlightened regulatory actions, openness and new funding.
 - Increased healthcare innovation
 - Health system may struggle to respond effectively.
- We might see a higher risk sensitivity leading to increased focus on the resilience of today's global and geographically vulnerable value chains.
- At the other end is balkanization – a prolonged economic disruption and associated public health crisis with health system struggling.
- One can imagine that a national interest view to healthcare will become a key policy lever with measures like profit and pricing caps, soft or hard nationalization and government mandates to secure supply and state directed innovation.
 - Forms of deglobalization will be visible as markets take a national security view of healthcare (Mint, 2020).

4. IMPACT OF COVID-19 ON INDIAN PHARMACEUTICAL SECTOR

Now, talking about Indian Pharmaceutical Sector; Money Control, one of India's leading business news channels has brought about an opinion:

Global Dependence upon China for key pharmaceutical ingredients is well known and India is no exception.

Dependence stretches more than 50% for Indian Pharmaceutical Industry. Three Basic analysis points:

4.1 Vital Minerals off the Shelf

- As per Indian Drug Regulatory Authority (IDRA), 57 APIs (Active Pharmaceutical Ingredients) of antibiotics, vitamins and steroids might be out of stock in case of prolonged shutdown in China.
- Since Hubei (China) province is the center of epidemic and is also the 10% holder of APIs of the global Ibuprofen demand.
- Solara Active, Granules India and IOL Chemicals are the major producers of Ibuprofen in India currently.
- Vitamin dependence of India on China is high for vitamin C, B6, B2, B1, H and Thiamine.
- B6 is largely sourced product from China
- But, in case of Vitamin D, India is net exporter for the Vitamin D API and capsules.
- India's dependence on China is very high for about 16 classes of antibiotics.
- 205 of India's total pharma exports to the world in volume terms is antibiotics, which means non-availability of raw material from China would impact India's pharmaceutical exports.

4.2 Key bottlenecks in logistics

- Delivery staffs bringing shipments from China need to be quarantined for 14 days.
- Plants would continue to operate at low utilization levels to avoid inventory pile up.
- General Assessment in supply from Hubei could take about 4-5 months to normalize.

5. IMPACT OF CHINA SITUATION ON INDIAN PHARMA COMPANIES

- Prices of most of the APIs have jumped in the last one month (particularly Antibiotics)
- Passing on raw material price increases may not be reflected in retail drug prices, as most product prices of formulations are kept under drug price control.
- Companies catering to export market could benefit (Sakshi Batra, 2020).

Also, Drug and Raw material costing is an issue, due to the affected China and India under lockdown, there will be rise in cost of raw material and drugs.

For instance;

- Paracetamol price has gone up to Rupees 400-450/kilogram from 250-300/kilogram.
- 40-50% price hike has been observed in vitamins and penicillin in India.

Most talked about medications in this pandemic are Hydroxychloroquine and Chloroquine, these drugs might see a shortage in supply and greater demand during this current scenario. Big Data Infrastructure as well as social listening will play a key role (Ameex Technologies, 2020).

6. IMPACT OF COVID-19 ON INDIAN ECONOMIC SECTOR

India's financial position has been worsening for several quarters now but the coronavirus pandemic and only made things worse. The country remains virtually shut since March 25, 2020. MSMEs (Micro, Small and Medium Enterprises), Hospitality, Aviation, Automobile and Real Estate are among the worst hit sectors. The country's unemployment rate is at 27.1% (highest ever) indicating a bloodbath in wake of coronavirus pandemic and the lockdown.

The Prime Minister of India announced a booster dose for the economy, of 20 lakh crore rupees. This package is almost 10% of India's total GDP. The package will focus on farmers, laborers, MSMEs, middle class and the Industrial sector, as per the Government. Agriculture is possibly the easiest sector that can be revived easily, while projections from April to June show a slight decline in the range of approximately 1.5% negative growth.

In the current scenario, most credit rating agencies have drastically cut India's GDP forecast from their earlier projection. Index of Industrial production also witnessed a sharp decline of 16.7%. Projections show that WORLD ECONOMY may lose nearly 8.5 trillion dollars over the next two years (India Today, 2020). The drop in NIFTY (National Index Fifty) because of this pandemic is 35%.

Retailers were affected; mainly retailers of cars, furniture, garments & jewellery were affected the most. Non-vegetarian food sector has also been hit economically. Over the upcoming months, high risk will prevail upon jobs as the firms are planning to decrease manpower. According to S & P Global Ratings, there will be 5% contract in Indian economy FY21 (For Year 2021), in assumption of peak outbreak in September. The Swiss Bank UBS stated, amid this lower than assumed domestic economic activity and prevailing global recession, India's economy might fall down by 5.8% in this ongoing year.

The lockdown of more than 2 months and the migration of laborers and workers from cities and industrial areas have handicapped economic procedures, in spite of the eased restrictions and permission to restart business operations by Indian government. In the June quarter, 45% GDP contraction may happen, as projected by Goldman Sachs. S & P also cautioned that, "Three key aspects are pivotal in determining the risks possible for the recovery path:

- The rate of speed by which this pandemic is brought under control. Quicker normalization of work will be retrieved by quicker flattening of the curve.
- Recovery of labor market is necessary to uplift the economy.
- The restoration of balance sheets after the shock by all the sectors of economy is important. The lengthier the shock, later the recovery."

Also, it said a huge hit to growth implies a large, enduring economic waste and degradation in balance sheet tally. Economists projected growth for March quarter to be between 0.5% and 3.6%, which compares with 4.7% of December. Since March includes one-week lockdown, so it will be observed properly. Since many companies have the tendency of rising activity at the financial year end, so this gives an upward push to growth numbers.

According to HDFC Bank, non-essential items are responsible for 47% of total consumption expenditure, thus, lockdown is possible to hit consumer demand (Asit Ranjan Mishra, 2020).

7. IMPACT OF COVID-19 ON INDIAN SOCIAL SECTOR

Needless to say, India has witnessed a temporary shutdown of educational institutes throughout the country since 2nd week of March, 2020. It's been more than two months and there is still no surety as for when they will re-open.

While this quarter of the year was a pivotal time for the academics and education sectors, as:

- Board exams were going on.
- School admissions were open
- Entrance test of Universities and competitive exams were there.

The HRD Ministry of India has put up a halt on all of these as for now. This shutdown has affected almost 285 million students in India and has also stranded them in an environment of no surety. Firstly affected was the structure of traditional schooling and learning. Online teaching method was adopted by a handful of universities and schools and assessment of result has also been changed. This has also led to rapid increase in mobile internet usage in India, which projected to reach to 85% of households by 2024 (Richa Choudhary, 2020). The pandemic has disrupted the schedule of academic year and thus the UGC (University Grants Commission) came out with a new academic calendar to be followed which marks its start from September 2020 for new enrolling students and August 2020 for the already enrolled students.

Also, the Tourism Department along with the number of pilgrims for religious sites is facing a huge depletion. Hotels and tour operators have been hugely affected. Key temples of India such as Tirupati, Shirdi Sai, Vaishno Devi, Sabarimala, etc. started facing depleted crowd before the lockdown was announced because there was challenge in commuting to these places. Senior VP

of Paytm, Mr. Abhishek Ranjan has said “company has witnessed 30% decrease in travelers to top 10 pilgrim sites; also 80% depletion has been seen for Hotel Bookings” (Anumeha Chaturvedi, 2020).

COVID-19’s relation to the Second largest post-independence mass migration of the population from cities to rural areas: Many states of our country, such as, Assam, West Bengal, Rajasthan, Uttar Pradesh, etc. have been successful in transporting thousands of tourists and students stranded in other parts of our country back to their native state or home by means of road transport. But the migrant laborers or workers and many other tourist and individuals continue to be trapped in their work place or shelter homes. In addition to bringing back the students from Kota (Rajasthan), Punjab Government has also transported their stranded pilgrims back from Maharashtra, while the government of UP (Uttar Pradesh), Assam, Chhattisgarh, West Bengal and Uttarakhand have deported their students back from Kota.

The states have mainly used buses and other vehicles to bring these students and pilgrims back. Surat stuck migrant workers have conducted no less than 3 protests in recent weeks, demanding their return to home state. A huge commotion was witnessed in Bandra, Mumbai, as a few hundred individuals had accumulated there as a false rumor spread out that they will be supplied trains to get them back to North India. While declaring the lockdown, Prime Minister of India, Mr. Narendra Modi had strictly said that people should stay put at the same place they are now. Following this order, the Bihar Government is doing strict performance of lockdown, echoing the words of Modi.

During the preliminary stage of lockdown, many workers initiated moving to their native places by moving on foot from cities like Hyderabad, Delhi, etc. which generated a humanitarian crisis. This crisis piloted Home Ministry telling the state governments to not allow any movement, and respectively, organize shelter homes and supply them food. The Home Ministry allowed the state governments to utilize funds from NDRF (National Disaster Relief Fund) to accomplish the supply of food and organizing shelter for the migrant laborers.



Fig. 10: Migrants boarding buses in Kolkata
(Source: Business Line, 2020 Accessed date: 03 May 2020)

In a desperate urge to move back to their native places, a group of migrant workers were caught by Police of Maharashtra, as they were commuting from Telangana to Rajasthan in a container truck (Business Line, 2020). The lockdown has affected 40 million of migrants in India, as said by World Bank. Almost 50,000-60,000 people shifted from urban to rural areas. The magnitude is 2.5 times additive of international migration (PTI, 2020). In end of March, Anand Vihar Bus Depot in Delhi saw a huge amount of crowd, as people rushed in to avail the buses that were provided to take them back to their native places in Uttar Pradesh as arranged by Uttar Pradesh Government. Updated to 23 May 2020, 40 lakh migrants have reached home by buses.



Fig. 11: Migrants gathering to avail the transport services
(Source: PTI, 2020 Accessed date: 24 April 2020)

On 1st May 2020, the Government allowed Indian Railways the launching of “Shramik Special” trains, which was chiefly for the migrant workers. Later, the trains then saw a shortage of food and water and also reported deaths of many migrants.



Fig. 12: Shramik Special Train

(Source: *Indian express*, 2020 Accessed date: 28 May 2020)

Also, domestic flights were allowed by the Indian Government on 25th May 2020 for the transport of stranded citizens, but with conditions. NRIs (Non-Residential Indians) were being rescued and brought back home as well by release of certain special flights with of course raised prices.

8. METHODOLOGY

Since this is a review research report, so there was no involvement of practical aspects or practical labor. Everything was done virtually and studied thoroughly.

8.1 Collection of Data

The data for the research was collected from several internet pages and local newspapers, of which the prominent sites were the web pages of WHO and Indian Home Ministry. Worldometer provided detailed and accurate graphs of day to day changes in the Coronavirus scenario. References to the news stations and research paper studied are provided later in the report. Also, websites such as Academia.edu and Sciencedirect.com has helped me gain insight knowledge on this matter by providing access the ample amount of research papers.

8.2 Graphical Representation

The graph presented in Figure 9 was developed using the data collected and with the help of onlinecharttool.com. This website helps construct charts with the input of data and is free for access.

9. CONCLUSION

At this current time, it is very necessary to control the source of this pandemic disease, isolate the path of its transmission and utilize the available drugs to neutralize the progress of this disease. Optimistic nature is the key to this and we should look forward to the betterment of human population. Talking about the economic development, the demand may improve after the lockdown has been lifted, but it is highly doubtful that things will be normal as before COVID-19 appeared, as factors such as social distancing, future employment uncertainty, and income prospects will be adopted by consumers. If there is no appropriate fiscal support, through this year of recession, then the damage occurred will only become worse. Since there is no confusion that India has been hit by a major economic shock, the speed of healing, if there is any, is only possible and will be decided by the choices of economic policy taken to contain the major accompanying impacts, that are, lowered income levels, growth of non-performing loans, unemployment, etc. Industrial activities in rural areas have been allowed by Government, but with certain conditions. Correspondingly, in addition to essential commodities shops, government also allowed to open standalone business companies of non-essential commodities. About the matter of stranded citizens and migrants, government will provide definite measures for their rescue and see to their comfort. As I believe, India will overcome this pandemic in the upcoming days.

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ABBREVIATIONS

Table 2

Abbreviation Used	Actual Word
API	Active Pharmaceutical Ingredients
COVID-19	Corona Virus 2019
FY21	For year 2021
GDP	Gross Domestic Product
H1N1	Influenza a virus
HRD	Human Resource Department
ICTV	International Committee on Taxonomy Viruses
IDRA	Indian Drug Regulatory Authority
MERS-CoV	Middle-East Respiratory Syndrome
MSME	Micro, Small and Medium Enterprises
NDRF	National Disaster Relief Fund
NIFTY	National Index 50
NRI	Non-Residential Indian
SARS-CoV	Severe Acute Respiratory Syndrome Corona Virus
SARS-CoV-2	Severe Acute Respiratory Syndrome Corona Virus 2
UGC	University Grants Commission
UP	Uttar Pradesh
Vs.	Versus
WHO	World Health Organization