Administrative Development: A Journal of HIPA, Shimla. Volume VII (2), 2020.

COVID-19 AS A DISASTER AND ITS MANAGEMENT IN INDIA

Kamal Singh Chauhan *

Abstract

Covid-19 is presumed to be one of the most disastrous pandemics, which required a holistic and integrated approach to manage it like any other major disaster. This article briefly dwells in the historical perspective of pandemics, and analyses the trends and impact besides the adequacy and application of an institutional framework for disaster management in India to manage Covid-19. Despite the limited health system in India, various measures initiated by the disaster management authorities at all levels under the existing framework of disaster management for an immediate response, preparedness, mitigations, and recovery during Covid-19 enabled initial containment of spread and subsequent management of the disease in a much better manner than many other countries. The recovery measures initiated in India have triggered a gradual but remarkable restoration process in the social and economic sphere. Health-related sound laws and policies and their implementation play a critical role in managing the disaster of this magnitude. Notwithstanding, there are certain shortcomings in the institutional framework as also in its implementation during Covid-19, which require deliberation and necessary corrections.

Keywords: *Covid-19; Pandemic; Disaster Management; Institutional Framework; Preparedness, Response and Recovery.*

Introduction

Covid-19 has inflicted multidimensional losses since the beginning of 2020. While the uncertainty regarding the origin of the virus, and various related

* *Research Scholar, Department of Strategic and Regional Studies, University of Jammu, India, Email-kamalchauhan410@gmail.com*

issues including its impacts and remedies were still being analysed, researched and developed, it had already infected over a hundred million people and killed more than two million of them by the first week of April 2021, across the world. In India out of more than 12.6 million positive Covid cases, about 165,000 people died during this period (WHO, 2020). Besides the loss of precious lives, the Covid-19 caused a huge socio-economic impact across the world.

According to the Disaster Management Act 2005 of India, any mishap, catastrophe, calamity, or grave occurrence due to any reason, which causes substantial fatalities or human sufferings or loss, damage, destruction, degradation of property and environment, and which cannot be handled by the affected community within the means at their disposal, is termed as a disaster (Govt of India, 2005). Therefore, Covid-19 has been termed as a disaster. Consequent upon the enactment of the DM Act 2005, an elaborate institutional framework duly incorporating various international agreements for disaster management and allied issues, established in India has been internationally acknowledged and applauded (Thakur, 2017). India is the only country in the world that relied on the disaster management framework to deal with Covid-19. Japan, despite having a very advanced disaster management system, did not apply the provisions of disaster management and depended mostly on a high level of public awareness and public initiatives to achieve social distancing without having lockdown (NDMA, 2020).

Objectives

The research paper has the following objectives: -

1. To analyse the trend and socio-economic impact of Covid-19 in India with a view to comprehend the enormity at the macro level.
2. To broadly analyse the existing institutional framework for disaster management (DM) in India with a view to examine its efficacy, application, and deficiencies for managing Covid-19.

3. To broadly analyse the measures initiated for preparedness, response, recovery, and built-back better (BBB) during Covid-19 in India at macro level.
4. To arrive at the findings based on above analysis and suggestion for improving the institutional framework for DM.

Literature Review

Some studies on the diseases due to the Corona Virus family including Covid-19 have focused on the identification of various aspects of the virus pertaining to epidemiological attributes, and clinical management. Zumla et al. (2016) described various attributes of Severe Acute Respiratory Syndrome (SAR) and Middle East Respiratory Syndrome (MERS), and clinical management options in absence of any definitive drug and vaccine. Yang and Wang (2020) analysed the etiology and pathogenicity of the Covid-19 virus and suggested preventive and control measures. Emanuel et al. (2020) in their study analysed the exponential rising trend of Covid-19 leading to scarcity of medical resources and made pertinent recommendations for rational allocation of scarce medical resources. Liu et al. (2020) analysed the psychological impact on quarantined children in China and recommended measures for prevention. Bevel et al. (2020) analysed the challenges and impact of Covid-19 applying social and behavioural science, and factored, threat perception, leadership, individual and collective interests of the people in a given social context, and stress coping mechanism, which provides a more focused approach to deal with the pandemic.

Dasgupta et al. (2020) brought out that Covid-19 has impacted differently across countries, economic sectors, different sections of societies, and individuals. It has created an environment of uncertainty, which influenced the behaviour of people, countries, and organisations across sectors. Ghosh (2020) explored the asymmetric impact of uncertainty induced by Covid-19 on tourism using the concept of the pandemic index (PI), and

economic policy uncertainty index (EPU), which reduces economic growth much more than inappropriate fiscal policies. Yap et al. (2020) carried out a study to examine the extent of inclusiveness in the response measures to Covid-19, especially concerning disabled people. In the Indian context, Kumar (2020) criticised the Indian Govt for handling the Covid-19 in a lawless and strictly centralised manner. Mohan and Alex (2020) brought out that while the DM Act 2005 provides the necessary legal provisions to deal with Covid-19 at the national, state, and district level, the greater challenge lies in the coordinated execution of political and administrative measures, and collaborative and consultative approach at all levels of governance to deal with various social and economic problems including migration of labours. Chaturvedi (2020) also highlighted certain discrepancies in the implementation of the legal and policy framework of DM, as also the shortcomings in DM response, which caused a crisis for economically weaker sections of the society including migrant workers during Covid-19 in India.

A perusal of WHO timeline of Covid-19 reveals that China notified WHO about 44 cases of pneumonia of unknown etiology on January 3, 2020 (WHO, December 31, 2020), but with apparently incomplete and inaccurate data, which delayed the subsequent notification issued by the WHO. The details contained in the WHO- China Joint Mission Report show that the first confirmed case was detected in China on December 31, 2019, the peak of confirmed cases reached by January 27, 2020, and the cases declined to almost nil by the end of February 2020 (WHO- China Joint Mission, 2020). Thus, according to this report, Covid-19 was contained within two months across China due to commendable and extraordinary public health care measures.

Research Methodology

The secondary data consisting of information contained in the official documents duly authenticated by international, national, state, and district authorities, as also information available in the books, journals,

newspapers, and relevant websites have been used. The type of research is descriptive and analytical in nature. In view of the objectives of the study, the qualitative methodology has been followed. The analysis of data has been undertaken with measures of central tendency and percentages to draw reasonable inferences.

Results and Analysis

Trend

The first Covid-19 positive case with travel history from Wuhan was detected in India on January 30, 2020, the day WHO announced Covid-19 as an epidemic of international concern (NDMA 2020). The trend of accumulative positive cases on monthly basis up to March 31, 2021, is in Table 1.1. The positive cases increased sharply till September 2020, and thereafter the rate of increase declined till February 2021 substantially. However, with the second wave, the rate has started increasing again.

Table 1.1: Accumulative Covid-19 Positive Cases in India

Sr. No	Date	No of Accumulative Positive Covid-19 Cases	Percentage of Monthly increase
1	30-01-2020	5	
2	29-02-2020	7	40.00
3	31-03-2020	1,251	17771.43
4	30-04-2020	33,050	2541.89
5	31-05-2020	1,82,143	451.11
6	30-06-2020	5,66,840	211.21
7	31-07-2020	16,38,870	189.12
8	31-08-2020	36,21,245	120.96
9	30-09-2020	62,25,769	71.92
10	31-10-2020	81,37,119	30.70
11	30-11-2020	94,31,691	15.91
12	31-12-2020	1,02,66,674	8.85
13	30-01-2021	1,07,46,183	4.67
14	28-02-2021	1,10,96,731	3.26

16	31-03-2021	1,21,49,335	9.49

Source: WHO (2021)

A similar trend is visible in the daily positive cases depicted in table 1.2. Similarly, daily deaths due to Covid-19 after reaching the peak of 1,247 on September 19, 2020, started declining sharply; and the lowest weakly daily death rate, i.e., 1166 was recorded in the week ending September 14, 2020 (WHO 2020).

Table 1.2: Daily New Cases Covid-19 in India

Sr. No	Date	No of Daily Positive Covid-19 Cases	Approximate Rate of Daily Variation
1	30-01-2020	5	
2	02-03-2020	2	-60.00
3	31-03-2020	180	8900.00
4	30-04-2020	1,718	854.44
5	31-05-2020	8,380	387.78
6	30-06-2020	18,522	121.03
7	31-07-2020	55,078	197.37
8	31-08-2020	78,512	42.55
9	17-09-2020	97,894	24.69
10	30-09-2020	80,422	-17.85
11	31-10-2020	48,268	-39.98
12	30-11-2020	38,772	-19.67
13	31-12-2020	21,822	-43.72
15	02-02-2021	8,635	-60.43
16	28-02-2021	16,752	94.00
17	31-03-2021	53,480	219.25
18	01-04-2021	72,330	35.25
19	02-04-2021	81,466	12.63

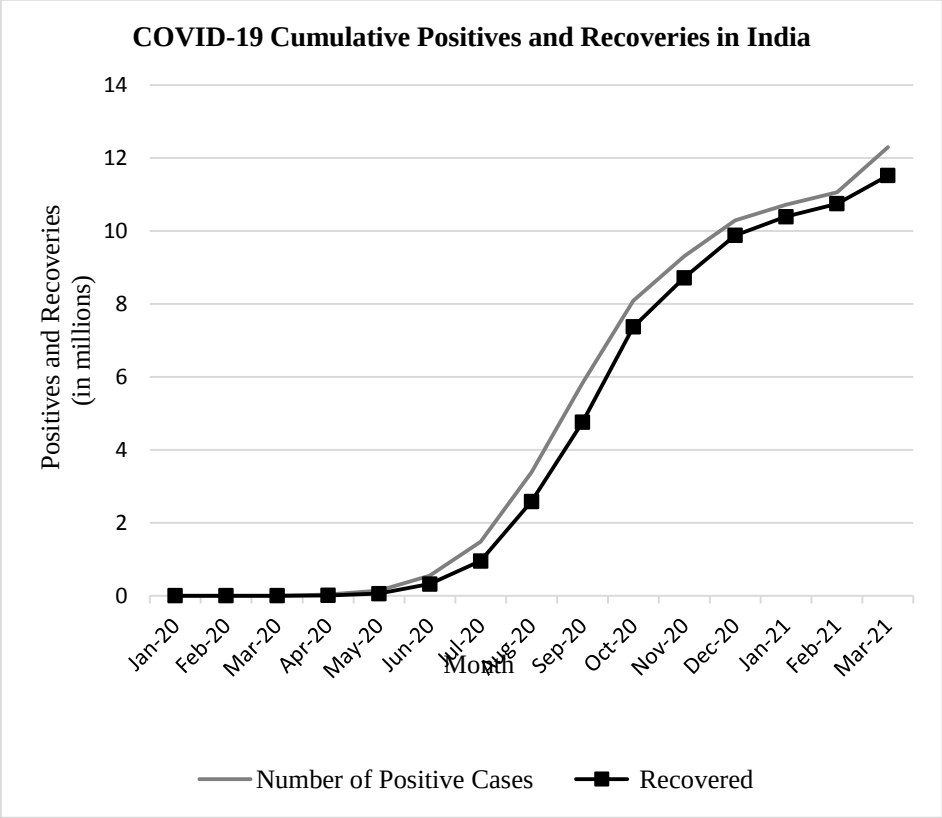
Source: WHO (2021)

The trend indicated that the spread was under control during the lockdown, and shot up on removing the restrictions. Nevertheless, the sharp decline in daily positive cases after crossing the peak in the month of September is

indicative of the positive impact of various measures initiated for improving preparedness and response to Covid-19. However, on rolling out of vaccine coupled with the continuous decline in daily cases till February 2, 2021, apparent overconfidence resulted in careless attitude and avoidance of essential precautionary measures by the population, which triggered the second wave in March 2021.

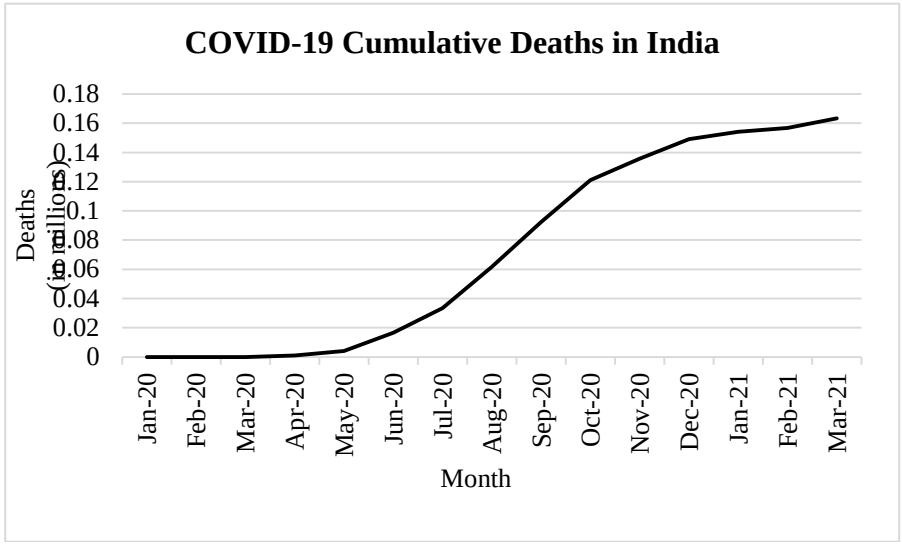
An overview of accumulative positive cases, recovery, and death is shown in Fig.1 and 2.

Fig.1



Source: Statista (2021)

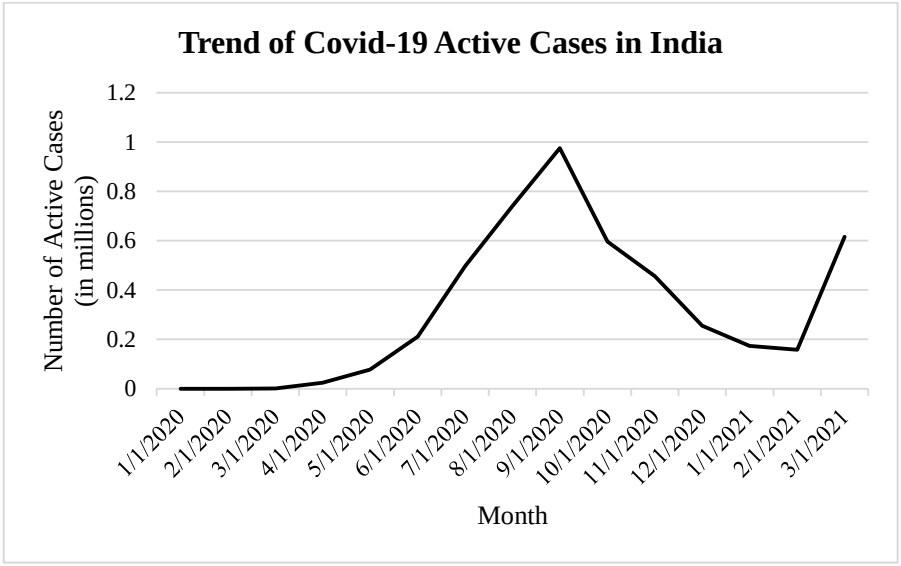
Fig. 2



Source: Statista (2021)

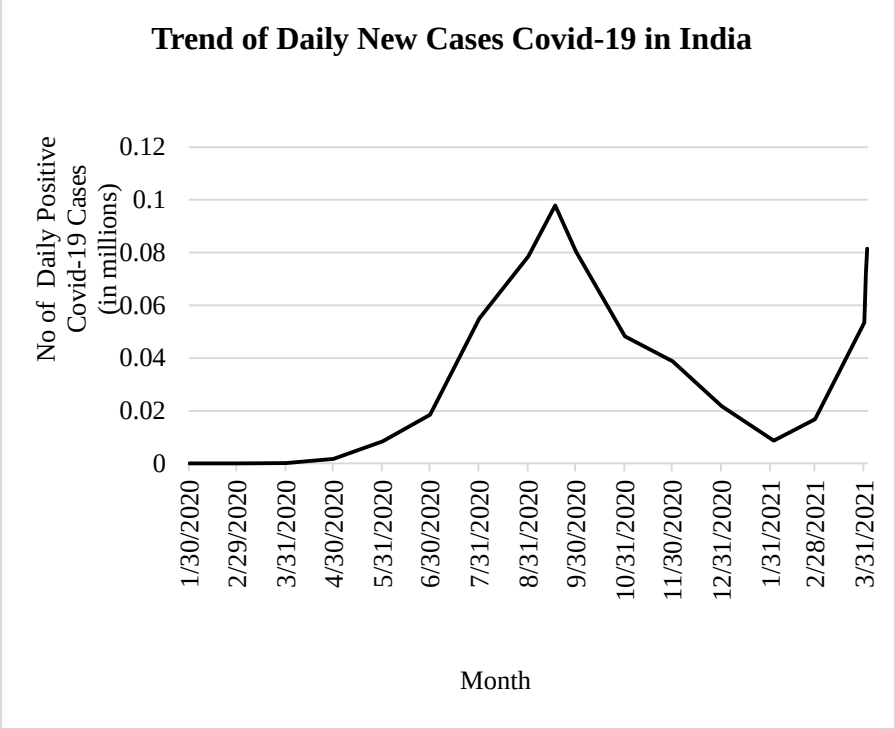
The trend of accumulative active cases and daily new cases is depicted in Figs. 3 and 4 respectively.

Fig.3



Source: Statista (2021)

Fig. 4



Source: WHO (2021)

The severity of the situation can be seen from the fact that merely in one day the daily cases increased by 12.63 percent on April 2, 2021. Notwithstanding, the second wave is also largely in the form of a cluster of cases in few states rather than community transmission as seen in most of the countries. The comparative death rate, recovery rate, and number of accumulative positive case per million population in India (WHO 2020) is an indication of a better strategy for management of Covid-19 adopted by India.

Socio-economic Aspect

About 264 million people across the world were reportedly under depression before Covid-19. The situation worsened due to social distancing, unpredictive and hopeless situation, anxiety, and anger owing to

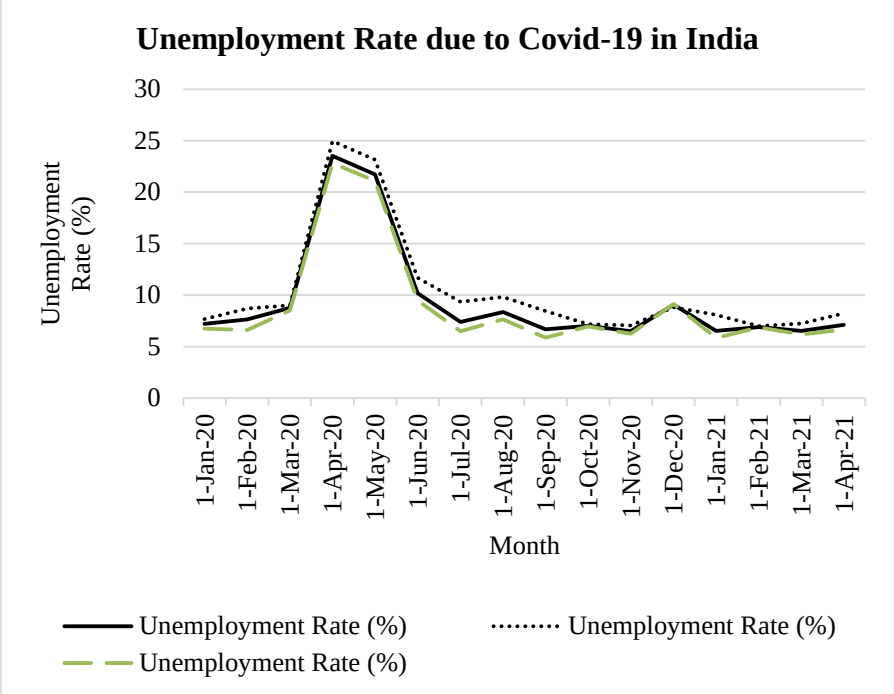
loss of livelihood and economic meltdown caused by Covid-19 (UN News, May 14, 2020). According to an online survey conducted in India between March 26 and April 27, 2020, about one-third of people surveyed, especially the younger ones, females, and people with comorbidities, were psychologically impacted (Varshney et al., 2020). Another online survey revealed that 12.5 percent of the surveyed people were found with sleeping difficulties, 37.8 percent were worried about getting infected, and 36.4 percent displayed distress due to social media.

Thus, about 80 percent of the surveyed people needed health care in India (Roy et al., 2020). Many people especially widows, single women, senior citizens, disabled people, and poor families in India were psychologically distressed and needed expert counselling (Caritas India, May 23, 2020). Mental health services already lacked adequate resources across the world, which worsened further due to Covid-19, due to inadequate attention paid by the govt authorities (O'Hagan, 2020).

Covid-19 has impacted people across all strata of society; however, the impact of Covid-19 has been asymmetric across the cross-section of people, sectors, and countries. The migrant workers, the marginal farmers, and street vendors suffered the most due to successive lockdowns. About 13.99 million migrant workers engaged in the informal sector either as a regular or casual worker lost their job when lockdown was imposed in India (Singh 2020). Uncertainty about return of normalcy, and fear of Covid-19 caused severe anxiety amongst most of the workers. Thus, driven by the instinct many workers decided to move back to their native places on foot only to suffer enroute. A rapid research conducted across 18 states in India concluded that 95.2 percent of the migrants lost their livelihood and nearly 10 percent lost some of their near and dear ones (Caritas India, June 6, 2020).

The trend of unemployment during Covid-19 is shown in Fig.5.

Fig 5



Source: CMIE (2021)

Due to lockdown the Average unemployment went up from 8.75 percent in March, 2020 to 23.52 percent in April, 2020 and remained at almost similar level in May, 2020 also. The increase was more prominent in Urban India. However, there was a sharp reduction in the unemployment from June, 2020 onward on removing the restrictions imposed during lockdown. Again, there is a slight increment in the month of April, 2021, which as of now may or may not have any relation with the onset of the second wave of Covid-19. The household income also reduced drastically during lockdown. An overview from February 23 to April 12, 2020 is depicted in Table 1.3. By April 12,2020 income of about 46 percent of the households in India reduced consequent to lockdown.

Table 1.3: Impact on Household (HH) Income due to Lockdown in India

Sr. No	Date	Percentage of HHs with no income change (%)	Percentage of HHs with rise in income (%)	Percentage of HHs with fall in income (%)
1	23-Feb	60.2	31.1	8.8
2	01-Mar	63.4	26.8	8.46
3	08-Mar	60.7	29	10.3
4	15-Mar	60.1	28.7	11.3
5	22-Mar	58	37.9	14
6	29-Mar	45.8	16.3	37.9
7	05-Apr	46	10.6	43.5
8	12-Apr	43.7	10.6	45.7

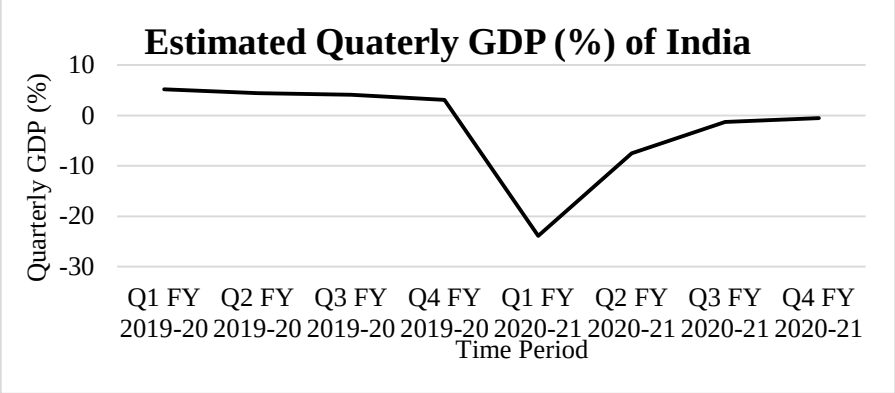
Source: Statista (2020)

Due to the sudden closure of all the educational institutions in the country, the studies of all the students got interrupted. There has been a huge setback to the education of the children of the migrants and underprivileged. More than 46 percent of the children discontinued their studies (Caritas India, June 6, 2020). Perforce online education was resorted to. Large part of rural India and most of the Govt schools are devoid of adequate internet connectivity and requisite infrastructure for sustaining meaningful online education system. Covid-19 has also adversely impacted the studies of students as also the employment opportunities post higher education in foreign countries across the world. Besides several challenges, students are also losing interest in studies due to online learning being passive. Innovative solutions are required to sustain the system (Pothula, Feb 4,2021).

The enormity of economic impact can be visualised from the fall of GDP growth in the Q4, 2019-20 to 3.1 percent, which stands revised by the Govt to 4.1 percent later. The growth rate of eight core industries reduced by 38.1 percent in the month of April 2020, as against a 9 percent reduction in the month of March 2020. The fiscal deficit of India for the financial year 2019-20 increased to 4.6 percent of GDP against the target of 3.8 percent. (Sharma, 2020). An overview of estimated quarterly GDP for FY 2019-20,

and FY 2020-21 derived from a dynamic stochastic general equilibrium (DSGE) model deliberated in the Reserve Bank of India's Annual Report for FY 2019-20 is given at Fig. 6.

Fig 6



Source: Reserve Bank of India (2021)

It may be seen that the economy was envisaged to take a V shape, in which maximum growth would decline in the first quarter of FY 2020-21, and the growth was estimated to turn positive in the fourth quarter of the FY 2020-21. The model also predicted low inflation during this period. More importantly, the model envisaged that without having imposed any lockdown the inflation would have persisted due to supply shock and it would have resulted in permanent loss of output and growth stagnation beyond FY 2020-21 (RBI, 2020).

The Covid -19 inflicted twin economic shocks. Demand shock was caused due to reduction in investments owing to uncertainty, as also due to reduction in demand for non-essentials owing to social distancing and precautionary savings. Consumption also reduced due to loss of income. Supply shock was caused due to labour supply shock and inability to work from home in non-essential industries, as also due to disruption in supply from China. Agriculture sector remained unaffected, however due to disruption in supply chain high food inflation and reduction in agriculture

export was witnessed. The manufacturing sector; and tourism, hospitality, and aviation industries were the worst affected (Govt of India, 2021).

Analysis and Application of Institutional Framework for DM in India

DM Framework

All the Ministries/Departments of the Central and State Govt have been mandated to prepare specific DM plans and dovetail the provision for disaster prevention and mitigation in the developmental plan. Provisions for mitigation and response funds have also been made at all levels (Govt of India, 2005).

The DM Act 2005 empowers the DM Authorities at every level and Central Govt for imposing any restriction with necessary provisions for penalties or initiating any action or making any laws/rules for effective disaster management. NEC and SECs, and DDMAs are empowered to requisition resources, services, provisions, and vehicles, etc. on payment of suitable compensation (Govt of India, 2005). During Covid-19 most of the health and administrative measures to deal with Covid-19 have been initiated by the DM authorities at all levels under the provisions mentioned above. The measures were also based on the National policy on Disaster Management 2009, National Disaster Management Plan 2016/2019, and national guidelines for the management of various disasters, including the guideline for the management of biological disaster, which also covers various facets of the management of Pandemics comprehensively (NDMA, 2008). Notwithstanding, by and large institutional framework for DM in India provides almost all the essential legal, financial, and administrative provisions required for planning, execution, coordination, and monitoring of preparedness, mitigation, response, relief, and recovery about all types of disasters including the biological disaster.

Application of DM Framework and Shortcomings

Like the rest of the world, India was also caught off guard but quickly geared up to face the unprecedented challenges presented by the sudden

onset of Covid-19 by invoking DM Act 2005. From the very beginning, most of the public health measures and administrative instructions including declarations of successive lockdowns and unlocking of restrictions during Covid-19 were issued by the DM Division of Ministry of Home Affairs (MHA) on behalf of NDMA. For example, NDMA referring to the Guidelines for Biological Disaster Management 2008 communicated eight action points pertaining to preparedness and capacity developments on February 4, 2020; and another set of action point regarding containment plan on March 5, 2020, to Govts of all the States/UTs (Govt of India, February 4 &March 5, 2020). After due deliberations, on March 24, 2020, NDMA issued an order to ensure social distancing, which resulted in complete lockdown w.e.f. March 25, 2020 (Govt of India, March 24&25, 2020). Thereafter, NDMA issued a detailed advisory to State Disaster Management Authorities regarding functioning of State Emergency Operation Centres (SEOCs), interagency coordination, community awareness, coordination with neighbouring states, industries, NGOs, and issues related to migrant workers and tourists on March 28, 2020 (Govt of India, March 28, 2020). NDMA also promulgated several other advisories on many issues related to essential services and the personnel engaged in these activities, in the form of Dos and Don'ts. NDMA also issued orders to extend the lockdown twice i.e., on April 14 and May 1, 2020.

In absence of any information about the availability of transport, thousands of migrant workers while violating all norms of social distancing gathered at Anand Vihar Bus Station to reach their native places on March 28, 2020. Similar situation was observed in Mumbai and Surat. Thousands of migrant workers, some with their families started moving on foot and walked hundreds of kilometres along national and state highways, link roads and railways. Most of them ran out of the food and water (Indian Express March 28, 2020). Similar reports were received in the other major cities of India. Besides many accidents and incidents causing fatalities of migrant workers, the crushing of 18 sleeping people on the railway track by a goods train on May 8, 2020, and death of 25 migrant workers on May 16, 2020 due to road

accident at Auraiya in Uttar Pradesh are most shocking and heart shattering (Ahmad et al. 2020, 2-3)

Notwithstanding, the lockdown did help a great deal in containing the spread of Covid-19 and enhancement of preparedness by creating additional resources, infrastructure, and capacities related to medical facilities. The same can be seen from Table 1.4.

Table 1.4.: Status of Health Infrastructure during Covid-19 in India

Sr No.	Health Infrastructure & Diagnostics	Status Before First Lockdown	Status by December 29,2020
1	Covid Testing Lab	1	2,288
2	No of tests per day	Data NA	More than 1.5 million
3	Covid Treatment facilities	Data NA	15,378
4	Isolation Beds without Oxygen	Data NA	12,67,127
5	Isolation Beds with Oxygen	Data NA	2,70,710
6	ICU Beds		81,113
7	Beds with Ventilators	Data NA	40,627
8	Total tests	Data NA	17,09,22,030
9	Indigenous Laboratory diagnostics testing machine	0	1 million kits/day
10	Additional Quarantine Centres	0	12669 with 5,91,496 beds

Source: PIB (2021)

The reasons for the lack of coordinated response during the onset of Covid-19 in India can also be traced from the report of Task Force set up in 2013 by the Govt of India to review the DM Act 2005, which had highlighted the

shortcomings in functional integration amongst NDMA, NEC and other Union Ministries/Departments under the existing provisions. The report had also brought out that even the Union Ministries had not met the mandate of the DM Act 2005. The Task Force, therefore, had recommended some important amendments including replacement of existing NEC headed by Home Secretary, with National Crisis Management Committee (NCMC) headed by the Cabinet Secretary vested with primary responsibility for coordinating the disaster mitigation and preparedness measures, and for monitoring and coordinating the response during the disaster (Govt of India, 2013). The absence of disaster management plans of many Ministries including MoH & FW in the public domain further substantiates the findings of the Task Force. Thus, despite the adequacy of sufficient provisions in the legal framework of DM, the implementation was found to have deficiencies especially on account of coordination in the initial stage. Subsequently, when Cabinet Secretary stepped in the coordination process the issues were resolved to a large extent.

Response, Preparedness, Recovery and BBB

For making a quick situation assessment, a national survey on preparedness for Covid-19 was carried out through feedback from 440 District Magistrate (DM)/Deputy Commissioner (DC), who were also the chairperson of the DDMA across the country. The survey revealed that most of the districts had a shortage of medical staff, medical equipment, and infrastructure including ventilators, oxygen cylinders, ICU Beds, and ambulances. Adequate PPE kits, isolation and quarantine facilities, and testing facilities were also not available. However, awareness about Covid-19 except in few backward districts and amongst the tribal population was adequate. Problems related to contact tracing and the exodus of migrant workers were also highlighted in the said survey (Govt of India, April 1, 2020).

In April 2020, a containment plan for a large outbreak of Covid-19 was prepared by the MoH & FW, which focused on a scenario-based strategic

approach. The containment plan elaborated various measures about travel-related cases, local transmission, large outbreaks which can be contained, community spread, and endemic scenarios. Besides preparedness, pharmaceutical, and nonpharmaceutical measures, the plan also elaborated measures for institutional mechanism and inter-sectoral coordination at national and state levels. Group of Ministers (GOM) headed by Minister of MoH & FW with other Ministers of External Affairs, Civil Aviation, Shipping, Pharmaceuticals, and MHA was made the apex body for policy decisions. The NCMC headed by Cabinet Secretary was assigned the responsibility to review, coordinate and direct various Ministries and States on both pharmaceutical and nonpharmaceutical issues (Govt of India, 2020).

On April 7, 2020 Govt of India approved a package of Rs 1.5 billion (15,000 Cr) for emergency response, and for enhancing preparedness of the health system at national and state levels. The project under this package was envisaged to be implemented in three phases commencing from January 2020 to March 2024. Phase-1 ended in June 2020 with an allocation of Rs 777.4 million (7774 Cr) was meant for emergency response measures such as the development of fully equipped Covid Hospitals with adequate ICU beds, ventilators, testing facility, manpower, and other requisite infrastructure; procurement of PPE kits and N95 Masks, strengthening of existing laboratories to enhance diagnostic capacities, survey, and surveillance, and risk awareness and communication, etc (Govt of India, April 7, 2020, & April 9, 2020). About 22 million (2.2 Cr) PPE, 24.9 million (2.49 Cr) N-95/N-99 masks, and 60,884 ventilators were ordered. More than 50 percent of these were manufactured domestically (PTI, 2020). Thus, the health system was geared up to a reasonable level in a short time frame.

Also, India proposed a four-year, duly prioritised fast track COVID-19 Emergency Response and Health Systems Preparedness Project worth $ 1 billion funded by the World Bank. Central Govt also announced a Rs 17 billion (1.70 lakh Cr) package, which included free food grains, and direct

cash transfer under various schemes to vulnerable sections of society, on March 26, 2020. About 42 crore poor people received cash assistance of Rs 5.3248 billion (53, 248 Cr) by June 2, 2020 (Govt of India, June 3, 2020).

Besides immediate response measures, Indian Govt. also initiated some significant short-term and long-term measures including the announcement of additional financial packages for restoration and recovery, as also for converting the pandemic situation into an opportunity to build back better. On May 14, 2020, the Prime Minister of India announced a special economic package of Rs 20 lakh crore with a focus on land, labour, liquidity, and laws catering for cottage industries, micro, small and medium enterprises (MSME), working-class, and the middle class. This package was aimed at reforming the agriculture supply chain, introducing rational taxation laws, simplifying and bringing more clarity in the laws, and developing capable human resources and a robust financial system. The package also focused on empowering the farmers, poor people, and migrants in organised and unorganised sectors. The stress was laid on self-reliance through a strong economy, infrastructure, system, demography, and demand (ET Bureau, May 14, 2020).

Despite several fiscal measures, the Govt was questioned on two counts. One, direct cash transfer amount is not adequate to stimulate the requisite demand; and two; no additional allocations have been made to states to tiedown the economic crisis at the state level. Though the ideal is difficult to achieve, a detailed examination of all the front-loading done by the Govt in terms of direct transfers to weaker, and needy people of the society as fiscal measures, coupled with the measures initiated for the cottage, and MSME, has generated adequate stimulus for enhanced demand to spur economic growth. Similarly, State Disaster Relief Funds were adequately front-loaded, besides making tax payments to states liberally. Also, the borrowing limit of the states was extended by 2 percent, though with certain conditions; which also provided additional stimulus to the demand side of the economy (Rajaraman, 2020). The measures initiated by the Govt have

induced enhancement of consumption and demand, but confidence instilled in private consumption of non-discretionary nature and demand, especially of urban population is essential to restore the economic growth (RBI, 2020). GST collection trend as shown in Table 1.5, and other indicators shown in Economic Survey of India 2020-21 indicate that the economic recovery of India is on the right trajectory (Govt of India 2021).

Table 1.5: GST Collection Trends During April-December 2019 and 2020

Month	GST Collection	Month	GST Collection
Apr-19	1.14	Apr-20	0.32
May-19	1	May-20	0.62
Jun-19	1	Jun-20	0.91
Jul-19	1.02	Jul-20	0.87
Aug-19	0.98	Aug-20	0.86
Sep-19	0.95	Sep-20	0.92
Oct-19	1.05	Oct-20	0.95
Nov-19	1.05	Nov-20	1.03
Dec-19	1.15	Dec-20	1.15

Source: Ministry of Finance, GoI (2020)

Besides the institutional framework for disaster management, the health-specific policy and frameworks are also important to effectively deal with any health emergency including Covid-19. The latest National Health Policy and National Action Plan on Antimicrobial Resistance (NAP-AMR) formulated in 2017 did help in optimising the health infrastructure and health system to some extent during Covid-19, however, much remains to transform the health system in India (Govt of India, 2017; Rajalkar and Chandy, 2019). Enacting a pending National Health Act may give the desired impetus; however, pandemics like Covid-19 having multifarious dimensions and impact could be better handled through DM Act 2005 as a primary law in conjunction with other laws for subsidiary issues; at least during planning preparedness and response stage.

Major Findings

The major findings of the study are as below:

- In absence of robust health and medical system, public health measures including lockdowns initiated in India by invoking the Disaster Management Act 2005, helped a great deal in containing the spread of Covid-19 and strengthening the infrastructure and preparedness to deal with it on a long-term basis.
- Though, the lockdown caused huge socioeconomic losses but did help in containing the spread of Covid-19 during the critical stage, and also optimised the economic growth in the long term.
- The legal and financial provisions in the existing institutional framework for disaster management in India are adequate to deal with all types of disasters including biological disasters. However, some dilution in the application and implementation resulted in a lack of coordination, cooperation, and integration at national and state levels to some extent.
- Series of response and recovery measures initiated by the Govt helped a great deal in restoring and recovering the essential socio-economic activities, system and infrastructure to a large extent.
- While viewing Covid-19 as a health crisis, MoH&FW had a major role as a nodal Ministry, but many other associated administrative, logistic, social, and economic issues necessitated multi-sectoral involvement and coordination at the ministerial level, which could have been better coordinated by the Chairperson of NEC under the direct control of NDMA rather than the Secretary MOH&FW who was delegated powers retrospectively.

Suggestions

- As of now, the Govt is faced with the challenges of arresting the rising trends of the second wave of infection curve, vaccinating the maximum population in the shortest time frame, restoring the employment to all those who lost employment, especially the displaced migrant workers,

and putting the entire economy back on track, which is the need of the hour.

- Recommendations made by the Task Force to review Disaster Management Act 2005, should be considered for immediate implementations.
- Also, recommendations made in various guidelines including the ones for management of chemical, biological, radiological, and nuclear (CBRN) disasters/emergencies, issued by NDMA must be deliberated and action should be initiated for implementation.
- Transformation of the health system in accordance to National Health Policy 2017, National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017, and IHP 2005 is essential and must be ensured.

Conclusion

Historically, popular public health measures such as social distancing, surveillance, tracing, tracking, isolation, quarantine, etc play an important role in containing the spread and reducing the death rate during any pandemic. Since the world has shrunk to a global village, timely and accurate notification of the emergence of any new virus by the respective countries to WHO in accordance with IHR 2005 is of utmost importance. Timely reporting and subsequent suitable measures initiated across the world prevented past epidemics such as SARS, MERS, Ebola, and Avian and Swine Flu from taking the shape of a pandemic. Apparently, due to irresponsible behaviour displayed by China, this did not happen on the emergence of the Covid-19 virus, which not only led to a pandemic but caught the whole world by surprise. Covid-19 has caused huge loss of lives, besides long-lasting social and economic impacts. Under the institutional framework for DM series of measures initiated by India for an immediate response, preparedness, recovery, and build back better have helped in moving forward on the difficult path. By and large, India has done better in containing the spread of Covid-19. Statistics such as recovery rate, doubling rate, and the death per million populations are much better than many other countries. Notwithstanding, the existing health system needs

immediate transformation in accordance with National Health Policy 2017, National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017, and IHP 2005. Govt has much tougher tasks ahead for curbing the pandemic and putting the economy back on track. While the Govts at all levels are doing their best, it is essential that all the citizens ensure social distancing and use masks under all circumstances, and continue to behave responsibly even post-vaccination to defeat Covid-19 collectively.

References

1. Ahmad, Ritu Kumar; Mohammad Shakil Ahmad; Riyaz Ahamed Shaik. "India's Response to COVID-19 Pandemic and Its Impact on Migrant Workers – A Public Health Perspective". International Journal of Current Research and Review, 12, no.21, November 2020.
2. Bavel, J. J.V., Baicker, K., Boggio, P.S., Capraro, V., Cichocka, A., Cikara, M., . . . Tucker, J. A. (2020). Using social and behavioural science to support COVID-19 pandemic response. Nature Human Behaviour 4, 460–471. https://doi.org/10.1038/s41562-020-0884-z
3. Caritas India. (May 23,2020). Mitigating the Psycho-social impact of Covid 19. Reliefweb.https://reliefweb.int/report/india/mitigating-psycho-social-impact-covid-19
4. Caritas India. (June 6,2020). The New Exodus- Redefining the Destiny Migrants, Farmers and so many. Reliefweb. https://reliefweb.int/report/india/caritas-india-presented-research-findings-covid-19-impact-migrants-and-farming-sector
5. Chaturvedi, S. (2020). Pandemic Exposes Weaknesses in India's Disaster Management response. The HINDU CENTRE for Politics and Public Policy. https://www.thehinducentre.com/the-arena/current-issues/article32502100.ece
6. Dasgupta, U., Jha, C.K., & Sarangi, S. (2020). Procedural Rationality in the Time of Covid-19. Economic & Political weekly, 55(25). https://www.epw.in/author/chandan-kumar-jha
7. Emanuel, E. J., Persad, G., Upshur, R., Thome, B., Parker, M., Glickman, A., .Phillips, J. P. (2020).Fair Allocation of Scarce Medical

Resources in the Time of Covid-19. The New England Journal of Medicines, 382(21), 2049-2055.https://www.nejm.org/doi/pdf/10.1056/NEJMsb2005114?articleTools=true

8. ET Bureau. (2020). PM Modi announces Rs 20 lakh crore special economic package. The Economic Times. https://economictimes.indiatimes.com/news/politics-and-nation/pm-narendra-modi-address-live-centre-announces-an-economic-package-of-rs-20-lakh-crore/articleshow/75699154.cms?from=mdr.
9. Ghosh, S. (2020). Asymmetric impact of COVID-19 induced uncertainty on inbound Chinese tourists in Australia: insights from nonlinear ARDL model. Quantitative Finance and Economics, 4 (2), 343–364. doi: 10.3934/QFE.2020016
10. Govt. of India. (2005). The Disaster Management Act 2005. (pp. 4 -14 & 17-29). New Delhi: Ministry of Law and Justice Gazette of India. http://www.ndma.gov.in/en/disaster.html.
11. Govt of India. (2009). National Policy on Disaster Management 2009. P. 13. New Delhi: NDMA. https://ndma.gov.in/images/guidelines/national-dm-policy2009.pdf
12. Govt of India. (2013). Report of the Task Force, A Review of the Disaster Management Act 2005. pp. 51-63 & 121-122. New Delhi: MHA. https://www.ndmindia.nic.in/images/TaskForce_report_DMact.pdf
13. Govt of India. (2020). Containment Plan for Large Outbreaks Novel Coronavirus Disease 2019 (COVID-19). MoH&FW. https://www.mohfw.gov.in/pdf/3ContainmentPlanforLargeOutbreaksofCOVID19Final.pdf
14. Govt of India. (2020). D.O. No.1-137/2018-Mit-II(FTS-10548). NDMA. http://ndma.gov.in/sites/default/files/PDF/covid/04022020.pdf
15. Govt of India. (2020). Government of India sanctions Rs. 15,000 crores for India COVID-19 Emergency Response and Health System Preparedness Package.Press Information bureau (PIB). https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1612534

16. Govt of India. (2020). Central Government Ministry/Department COVID-19 UPDATE. https://nidm.gov.in/covid19/ministries.asp
17. Govt of India. (2020). National Preparedness Survey on Covid-19. Department of Administrative Reforms & Public Grievances (DARPG), pp. 23-24. https://darpg.gov.in/sites/default/files/COVID-19%20Impact%20Feedback%20Report.pdf
18. Govt of India. (2020). Order. No-1-29/ 2020-PP (Pt-II).http://ndma.gov.in/sites/default/files/PDF/covid/ndmaorder240320.pdf
19. Govt of India. (2020). Guidelines on the Measures to be Taken by the Ministries / Departments of Govt of India, State/ Union Territory Govts and State/Union Territory Authorities for Containment of Covid-19 Epidemic in the Country. Annexure to MHA Order No. 40-3/2020-D dated 24.3.2020. http://ndma.gov.in/sites/default/files/PDF/covid/Guidelines.pdf
20. Govt of India. (2020). NDMA Advisory. No 1-137/2018- Mit.1. http://ndma.gov.in/sites/default/files/PDF/covid/ndma-advisery-states-280320.pdf
21. Govt of India. (2020). Preliminary Stakeholder Engagement Plan (SEP), India COVID-19 Emergency Response and Health Systems Preparedness Project (P173836). MoH&FW. https://www.mohfw.gov.in/pdf/1PreliminaryStakeholderEngagementPlan.pdf
22. Govt of India. (2020). Preparedness and response to COVID-19 in Urban Settlements. MoH&FW. https://www.mohfw.gov.in/pdf/PreparednessandresponsetoCOVID19inUrbansettlements.pdf
23. Govt of India. (2020). Prime Minister Garib Kalyan Package-Progress so far. MoH&FW. https://pib.gov.in/PressReleasePage.aspx?PRID=1628877
24. Govt of India. (2020). Steps to be taken regarding Coronavirus (COVIO-19). Letter No. 1-137/2018-Mit-II (FTS-1 0548). NDMA. http://ndma.gov.in/sites/default/files/PDF/covid/05032020.pdf

25. Govt of India. (2020). Updated Containment Plan for Large Outbreaks Novel Coronavirus Disease 2019 (COVID-19) MoH&FW. May 16, 2020. https://www.mohfw.gov.in/pdf/UpdatedContainmentPlanforLargeOutbreaksofCOVID19Version3.0.pdf
26. Govt of India. (2020). Covid-19 Emergency Response and Health System Preparedness Package. MoH&FW. https://www.mohfw.gov.in/pdf/DOASMDCOVID19MD.pdf
27. Kumar, A. P. (2020). Lawless Law-making in a Covid-19 World. Economic & Political Weekly, 55(25). https://www.epw.in/journal/2020/25/law-and-society/lawless-lawmaking-covid-19-world.html
28. Liu, J.J., Bao Y., Huang, X., Shi, J., & Lu, L. (2020). Mental Health Considerations for Children Quarantined Because of COVID-19. Lancet Child Adolesc Health, 4(5), 347-349. https://doi:10.1016/S2352-4642(20)30096-1
29. Mishra, A. Rajan. (2020). India's GDP contraction could be one of the worst among G-20 countries. Livemint. https://www.livemint.com/news/india/india-s-gdp-contraction-could-be-one-of-the-worst-among-g-20-countries-11598775147186.html
30. Mohan, M.P. R., & Alex, J. P. (2020). COVID-19 and the ambit of the Disaster Management Act. THE WEEK. https://www.theweek.in/news/india/2020/04/26/covid-19-and-the-ambit-of-the-disaster-management-act.html
31. Morton, A. (2011). The Antonine Plague - the Germs that Killed an Empire.https://alison-morton.com/2011/11/10/the-antonine-plague-the-germs-that-killed-an-empire/
32. National Disaster Management Authority (NDMA). (2008). National Disaster Management Guidelines for Management of Biological Disaster. (pp. 29-35& 62). New Delhi: NDMA. https://nidm.gov.in/pdf/guidelines/new/biological_disasters.pdf
33. NDMA. (2020). COVID-19 Impacts and Responses: The Indian Experience. (pp. 5-6). NDMA: New Delhi.

https://www.ndma.gov.in/sites/default/files/PDF/covid/COVID-19-Indian-Experience.pdf

34. O'Hagan, S. (2020). Health Experts on the Psychological Cost of Covid-19. The Guardian.com. https://www.theguardian.com/world/2020/jun/07/health-experts-on-the-psychological-cost-of-covid-19
35. Penna, A. N., & Rivers, J. S. (2013). Natural Disasters in a Global Environment. (pp. 3, 197-2005). Chichester (UK): John Wiley & Sons Ltd.
36. Pothula, V.M. (February 4,2021). COVID-19's Impact on Education in India: It's Not All Bad News. Global Sisters Report. https://www.globalsistersreport.org/news/ministry/column/covid-19s-impact-education-india-its-not-all-bad-news
37. PTI. (2020). India ramps up production of Covid-19 protective gears, medical equipment. Economic Times. https://health.economictimes.indiatimes.com/news/medical-devices/india-ramps-up-production-of-covid-19-protective-gears-medical-equipment/75514109
38. Rajaraman, I. (2020). Opinion: The question of whether India's economic stimulus is adequate. Livemint. https://www.livemint.com/opinion/online-views/the-question-of-whether-india-s-economic-stimulus-is-adequate-11590686378298.html
39. Ranjalkar, J., & Chandy, S. J. (2019). India's National Action Plan for antimicrobial resistance – An overview of the context, status, and way ahead". Journal of family Care and Primary Medicines, 8 (6), pp. 1828-1834. https://dx.doi.org/10.4103/jfmpc.jfmpc_275_19
40. Reserve Bank of India (RBI). 2020. Annual Report 2019-20. pp. 2-24. https://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/0RBIAR201920DA64F97C6E7B48848E6DEA06D531BADF.PDF
41. Roy, D., Tripathy, S., Kar, S. K., Sharma, N., Verma, S. K., & Kausha, V. (2020). Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. Asian Journal of Psychiatry, 51, 1020832, pp.1-6.

https://reader.elsevier.com/reader/sd/pii/S1876201820301945?token=DF5E1E591BE1BE59D979F9C4837C437959D5791E80CCAF5C293E714A1D23B0A3C8DBE04536747CE66A6A8665EB0CB901

42. Sharma, S. (2020). GDP growth slows to 3.1% in Q4 FY20 but is this the final estimate? Govt caveat leaves room for revision. Financial Express.https://www.financialexpress.com/economy/gdp-growth-slows-to-3-1-in-q4-fy20-but-is-this-the-final-estimate-govt-caveat-leaves-room-for-revision/1975302/
43. Singh, Sushant. “Explained: Indian migrants, across India”. The Indian Express, April 29, 2020.
44. Thakur, P. (2017). India first country to have national plan for Disaster Risk Reduction. TNN, Times of India. https://timesofindia.indiatimes.com/india/india-first-country-to-have-national-plan-for-disaster- risk reduction/articleshow/58829054.cms?from=mdr
45. UN News. (May 14,2020). UN leads call to protect most vulnerable from mental health crisis during and after COVID. https://news.un.org/en/story/2020/05/1063882
46. Varshney, M., Parel, J. P., Raizada, N., & Sarin, S. K. 2020. Initial psychological impact of COVID-19 and its correlates in Indian Community: An online (FEEL-COVID) survey. PLOS ONE, https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0233874
47. Wan, W. (2020). How is the coronavirus outbreak going to end? Here’s how similar epidemics played out. The Washington Post. https://www.washingtonpost.com/health/2020/03/02/how-is-coronavirus-outbreak-going-end-heres-how-similar-epidemics-played-out/
48. World Health Organisation (WHO). (2020). Ebola virus disease. https://www.who.int/news-room/fact-sheets/detail/ebola-virus-disease
49. WHO. (2019). Worldwide reduction in MERS cases and deaths since 2016. https://www.who.int/emergencies/mers-cov/worldwide-reduction-in-mers-cases-and-deaths-since-2016/en/

50. WHO. (2020). Ebola Virus Disease. https://www.who.int/news-room/fact-sheets/detail/ebola-virus-disease
51. WHO. (2020). WHO Timeline - COVID-19. (2020). Statement. https://www.who.int/news-room/detail/27-04-2020-who-timeline---covid-19
52. WHO-China Joint Mission. (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019. 6-7 & 28 B. https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf?sfvrsn=fce87f4e_2
53. WHO. (2020). WHO Corona Virus Disease (COVID-19) Dashboard. https://covid19.who.int/
54. Yang, P., and Wang, X. (2020). COVID-19: a new challenge for human beings. Cellular and Molecular Immunology 17: 555–557 https://doi.org/10.1038/s41423-020-0407-x
55. Yap, J., Chaudhry, V., Jha,C.K., Mani,S., &Mitra, S. (2020). Are responses to the pandemic inclusive? A rapid virtual audit of COVID-19 press briefings in LMICs. Elsevier Public Health Emergencydoi: 10.1016/j.worlddev.2020.105122.
56. Zumla, A., Chan, J., Azhar, E. I., Hui, D. S. C., & Yuen, K. (2016). Coronaviruses — drug discovery and therapeutic options. Natural Review Drug Discovery, 15,327–347. https://doi.org/10.1038/nrd.2015.37