Journal of Polity & Society (2021) 13, 108 - 121

COVID-19 and Health Governance in India: A Phenomenological Perspective

RAMNATH REGHUNADHAN
IIT Chennai

GANESH M.V
Torrent Pharmaceuticals

The emergence of COVID-19 has disrupted the traditional systems of health governance worldwide while creating and revealing varying aspects of systemic problems. Almost all countries, including India, have been affected by the pandemic. The paper deals with the interlinkages between COVID-19 and health governance in India. More importantly, the paper emphasises developing a discourse within the society about the challenges and issues faced by informal healthcare professionals (IHPs). According to the study, the new era in the post-pandemic period will need a transformative indulgence in remodelling, recreating and revitalising key structures, institutions and personnel skills.

Keywords: India, Covid-19, health governance, IHPs, phenomenology

The Coronavirus disease 2019 (COVID-19), also known as the 2019 Novel CoronaVirus (2019-nCoV) has created the largest pandemic crisis in the 21st century, causing a ripple effect on the economy of almost all countries, and the lives of billions of people. A pandemic that has reportedly emerged in China has spread worldwide, disrupting the health governance system in almost all countries (WHO, 2020a; WHO, 2020b; WHO, 2020c). The transboundary dimension of the COVID-19 pandemic and the (in)efficiency of the existing global health governance (GHG) has created the largest backlash against human civilization over the last century. The recent literature on the impact of COVID-19 and health governance provides various themes. According to Pavone (2020), despite the COVID-19 Pandemic Declaration, the institutional and legal aspects of GHG have become largely ineffective (459-480). Ortega and Orsini (2020) reveal the limitations and the degradation of health governance. It elucidates the notions of 'government by exception' and 'strategic ignorance' in dealing with the pandemic, and the problems related to (non)governance within the country (1257-1275). Heine (2020) studies the impact of the COVID-19 pandemic on (wolf warrior) diplomacy and global governance.

Legge (2020) deals with transformations for the "multi-stakeholder public private partnership model", particularly within the Global South. Accordingly, there persist issues related to the core capacities viz.e.viz., "laboratory capacity, public/mass health surveillance, border control" and the like. It deals with the influences and pressures of transnational pharmaceutical corporations, creating transitional and

variegated spaces of sovereign critical decision-making on dealing with the pandemic. Singh (2020) analyses the exponential growth of "COVID-19 infections and fatalities", along with the need for "responsible political leadership, evidence-based decision-making, and coordinated global health action" (445-446). Brunelli et al. (2020) elucidates on the Pandemic Influenza Preparedness (PIP) Framework and the overall performance of the health systems (9-14). Gostin et al. (2020) reexamines the GHG in the context of COVID-19 and the emerging health threats and challenges for "nationalist governments". The role of the US has diminished the most due to COVID-19, more than a century after the creation of the "first international health organisation" under its leadership in 1902. Internationally, the US has been the largest funder of global health initiatives (1615-1618). Pai and Alathur (2020) discuss the need and aspects related to healthcare intervention in India, utilising technology (mobile health or mHealth) to deal with the COVID-19 pandemic. However, there is a lack of research and academic work on the impact of the COVID-19 pandemic on health governance in India.

The paper deals with the interlinkages between COVID-19 and health governance in India. It will also undertake a survey to analyse the impact on informal healthcare providers (IHPs) as well. The IHPs, also called the alternative health provider, medical detailers, medical representatives or pharmaceutical sales representatives (PSRs), have been hugely affected by the COVID-19 pandemic. This has a cascading effect on society as well, creating hindrances and challenges to health governance in India. The paper utilises a mixed-method approach, whereby both qualitative and quantitative research has been utilised for the study. A bilingual survey on public health, governance and IHPs in India was conducted from July 2020 to December 2020. The methodology used for the survey is snowball sampling, utilising Google Forms (shared through social media and emails), mainly due to the limitations of mobility during the pandemic. This strategy enables to overcome the issues associated with gaining access to and understanding of the sample population (Faugier and Sargeant, 1997), i.e., 223 IHPs from 48 pharmaceutical companies.

Health Governance in India

The Ministry of Health and Family Welfare recently allocated 9.3 billion USD. Overall, the healthcare market in India is expected to increase three-fold to 133.44 billion USD in 2022, while the hospital industry is estimated to be about 372 billion USD in 2022 (doubling in the last five years). The health sector spending in India is estimated to be 1.6 per cent of the total GDP, which is estimated (and required) to be doubled in the next few years (WHO, 2020a; Ministry of Commerce and Industry, 2020). As part of the quantitative analysis undertaken for the study, a comparative analysis of Indian health governance with those across the world has been undertaken in Table 1.

TABLE 1: Comparative Analysis of Global Health Governance Indicator in ten-most affected countries due to COVID-19#

Sl. No.	*Country*	***INFECTED#***		***DEATHS#***		H_p	E_{ff}
		A_p *(in %)*	P_1^+	I_p*(in %)*	P_2^+		
1	USA	3.750	1	2.072	2.5	1.75	Average
2	**India**	**0.669**	**2.5**	**1.459**	**2.5**	**2.5**	**Very Good**
3	Brazil	2.870	1	2.780	2	1.5	Below Average
4	Russia	1.482	1.5	1.736	2.5	2	Above Average
5	France	3.241	1	2.358	2.5	1.75	Average
6	Spain	3.411	1	2.738	2	1.5	Below Average
7	UK	2.267	1	3.629	1.5	1.25	Poor
8	Italy	2.407	1	3.526	2	1.5	Below Average
9	Argentina	3.057	1	2.709	2	1.5	Below Average
10	Colombia	2.481	1	2.826	2	1.5	Below Average
-	World	0.764	-	2.358	-	-	

(Source: Compiled by the First Author based on data from WHO, 2020a; Worldometer, 2020). #: Data taken as of 26 November 2020. Note: $^+$: Compared to Global Mean.

As part of the data analysis, various parameters have been used. This includes, the effectiveness of health governance in various countries E_{ff} and affected population A_p,

$A_p = [(N_p/T_p)*100]$ ...(1)

Here N_p is the number of the COVID infected population, and T_p is the total population of the respective country. The impact of COVID-19 is I_p ,

$I_p = [(D_p/N_p)*100]$ ...(2)

D_p is the number of deaths due to the COVID-19 pandemic. The Health Governance Indicator is H_p.

$H_p = [(P_1 + P_2)/2]$ ... (3)

Here P_1 and P_2 are Performance Indicators. The average mean of performance indicator P_1 ranges from values 0.382 to 1.528. H_p is the global average mean of Health Governance Indicator (HGI) that ranges from values 1.25 to 3. For P_1 and P_2 the results below 0.382 are assigned a value of 3, those between 0.382 d" H_p < 0.764 are assigned a value of 2.5, those between 0.764 d" P_1 < 1.146 are assigned a value of 2; those between 1.146 d" P_1 < 1.528 are assigned a value of 1.5; those above 1.528 are assigned a value of 1. The average mean of performance indicator P_2 ranges from values 1.179 to 4.716. The results below 1.179 are assigned a value of 3, those between 1.179 d" P_2 < 2.358 are assigned a value of 2.5 those between 2.358 d" P_2 < 3.537 are assigned a value of 2; those between 3.537 d" P_2 < 4.716 are assigned a value of 1.5, those above 4.716 are assigned a value of 1. The H_p values below 1.25 are categorised as Very Poor, the values between 1.25 d" H_p < 1.5 are categorised as Poor, the values between 1.5 d" H_p < 1.75 are categorised as Below Average, the values between 1.75 d" H_p < 2 are categorised as Average, the values between 2 d" H_p < 2.25 is categorised as Above Average; the values between 2.25 d" H_p < 2.5 are

categorised as Good, the values between 2.5 d" H_p < 2.75 are categorised as Very Good, and the values between 2.75 d" H_p < 3 are categorised as Excellent (Table 1). Based on Table 1, the Indian health governance system is performing well despite the challenges and issues of the COVID-19 pandemic that have arisen worldwide. India has been able to control A_p considerably and is the best performing among the countries in that regard (Table 1). This entails better containment and control over the spread of COVID-19 in an overall manner. This also points to the fact that mobility of the infections has been, to a greater extent, successfully restrained within the country. India was found to have effective tactics to mitigate COVID-19 related deaths, with I_p at 1.459 per cent. This was the best among the affected countries and performed moderately well compared to the international scenario. The current health expenditure (CHE) of India will reportedly increase to 280 billion USD in 2020, while about three-fourths of the country's total expenditure comes from the private sector. The health expenditure in the ten-most affected countries in the 21st century has been given below in Table 2.

TABLE 2: Health Expenditure in the ten-most affected countries (2000-2018)

Sl. No.	*Country*	*CHE (% of GDP) (R_{CHE})*	*GHE (in %) (R_{GHE})*	*OOP (in %) (R_{OOP})*	*P2H (in %) (R_{P2H})*
1	USA	15.11 (1)	47.38 (8)	12.98 (2)	19.25 (1)
2	**India**	**3.63 (10)**	**24.05 (10)**	**67.43 (10)**	**3.28 (10)**
3	Brazil	8.46 (5)	42.40 (9)	32.05 (8)	9.60 (9)
4	Russia	5.01 (9)	61.08 (6)	33.25 (9)	9.70 (8)
5	France	10.64 (2)	71.93 (4)	9.00 (1)	14.05 (5)
6	Spain	8.19 (7)	71.55 (5)	22.33 (5)	14.03 (6)
7	UK	9.08 (3)	79.70 (1)	15.05 (3)	17.63 (2)
8	Italy	8.37 (6)	75.05 (2)	23.35 (6)	12.98 (7)
9	Argentina	8.89 (4)	57.78 (7)	28.83 (7)	16.20 (4)
10	Colombia	6.59 (8)	72.03 (3)	16.15 (4)	16.83 (3)

Sources: Compiled by the First Author based on data from WHO, 2020d; R_{CHE}: Relative Ranking in CHE; R_{GHE}: Relative Ranking; R_{OOP}: Relative Ranking; R_{P2H}: Relative Ranking

In Table 2, India had ranked lowest in all the four categories taken as part of the analysis. This includes the Current Health Expenditure in the percentage of GDP (CHE), Government Health Spending as a percentage of Current Health Expenditure (GHE), Out-Of-Pocket Spending at the percentage of Current Health Expenditure (OOPS), and Priority to Health at the percentage of total spending (P2H). India's CHE was at 3.63 per cent and is the only country on the list to be below five per cent spending. This, along with the low rate of GHE and P2H, is considered to be the major reason for issues that often plague the healthcare sector, one which requires improvement in comparison to other developed and developing countries. Interestingly, it has the highest out-of-pocket spending at 67.43 per cent, one which is directly linked to poverty and the standard of living of citizens. This indicates a huge toll and burden on the citizens in India with regard to healthcare spending.

This scenario is further exacerbated due to very low possibilities for spending that will create further healthcare-related burdens and impact governance (MoHFW, 2020). An important sector that has to be dealt with in relation to the issues within health governance in the pharmaceutical industry.

Pharmaceutical Industry

India is a global leader in the production and export of generic drugs. It meets the demand of more than half of the global demand for medicines and is the major supplier in developed and developing countries. The pharmaceutical industry has shown huge growth spurts over the last few years. The drugs in India are considered to be among the cheapest in the world, with huge thrust and emphasis on frugal innovations in generic drugs and medicines. The healthcare spending for pharmaceutical drugs in India is considered to be among the highest among developing countries and is expected to enable India to leapfrog the major global players in the next few years. In 2019, India's pharmaceutical market's total turnover increased from 18.12 billion USD (in 2018) to 20.03 billion USD (in 2019). In December 2020, Piramal Pharma Solutions revealed its focus to invest 32 million USD in expanding its activities in the US, with regard to capacity building and "development and manufacturing of active pharmaceutical ingredients (API)". By 2023, the government plans to set up nearly 1.3 billion USD as a fund to boost companies to manufacture API domestically. The educated and technically skilled working population in India provide a huge impetus in terms of human capital and product development of drugs and medicines (Ministry of Commerce and Industry, 2020).

In April 2020, the Mobile BSL-3 VRDL Lab, with the capacity to process more than 1,000 samples/day was launched. It was the first COVID-19 sample collection mobile in the country. In May 2020, Karnataka-based Jubilant Generics Ltd started collaborating with US-based Gilead Sciences Inc to manufacture and sell the potential drug Remdesivir for treating COVID-19. Meanwhile, mergers and acquisitions (M&A) reached more than one billion USD (an increase of 155 per cent). In October 2020, Aurobindo Pharma acquired MViyes Pharma Ventures for 37.30 million USD, while six Indian companies[1] are collaborating with Mexico-based Hidalgo to "establish a large pharmaceutical cluster for production and logistics in Mexico" (MoHFW 2020; Ministry of Commerce and Industry, 2020). In November 2020, there was a surge in COVID-related solutions, particularly among the Indian Institute of Technology (IITs). Further, the Indian Immunologicals (IIL) began an investment of 10.17 million USD to establish a "manufacturing facility in Genome Valley" (in Telangana State). Meanwhile, it saw an annual growth rate of 17.16 per cent on income from health insurance, to reach 7.39 billion USD (growth of 16.59 per cent). India was among the fastest-growing markets for telemedicine. Over the last decade, the foreign direct investment (FDI) inflow reached around 16.5 billion USD. The rate of FDI was increased to 74 per cent in all existing pharmaceutical companies, with the provision of FDI up to 100 per cent in all upcoming projects. Additionally, the medical devices industry in India grew more than 15 per cent in 2020, and is expected to increase four-fold in the next five years (Ministry of Commerce and Industry, 2020). The

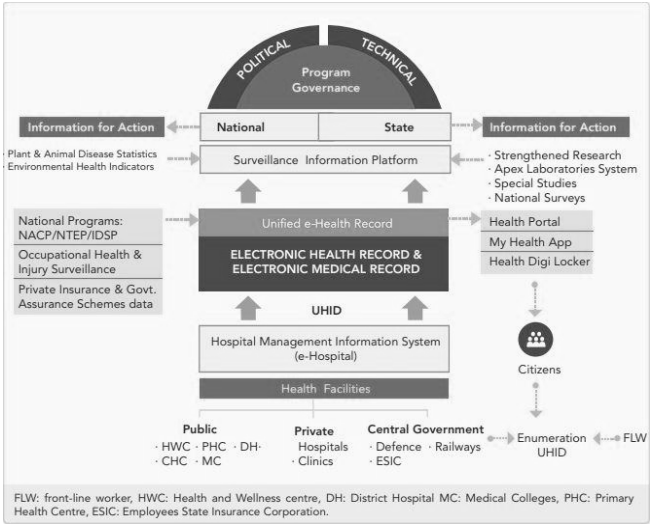
[1] Ackerman Pharma, Dr. Reddy's Laboratories, Glenmark Pharmaceuticals, Hetero Drugs, Torrent Pharmaceuticals, and Zydus Cadila.

Pharmaceuticals Purchase Policy (PPP) was extended and renewed by the government by the end of 2019, focusing on strategizing research and investment in pharmaceutical companies and enterprises in the public sector[2] (NHA, 2020; Ministry of Commerce and Industry, 2020)

The Way Forward: Government Initiatives

The Government of India has initiated schemes for health governance, that include the National Health Mission (4.88 billion USD), Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) (919.87 million USD), Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) (429.25 million USD), Pharma Vision 2020 scheme (1.3 billion USD), Pradhan Mantri Bhartiya Jan Aushadhi Kendra (PMBJK) (14.24 billion USD). Further the GoI came out with the Intensified Mission Indradhanush (IMI) 3.0, and the recent whitepaper titled Vision 2035: Public Health Surveillance in India etc. This provided for companies to boost indigenous, and low-cost research and manufacturing of ingredients for drugs and medicines in the country. The focus has been on responsiveness, predictability as well as enhancement of preparedness in improving the country's public health surveillance system. Further, privacy, confidentiality, Centre-state data-sharing, detection, prevention and control of diseases have been emphasised. The emphasis is on widening and developing an ecosystem for surveillance, networked labs linked to information systems as data sources, fund and increase innovation, ensure the use of data (predictive) analytics (Reghunadhan, 2018; NITI Aayog, 2020). This would provide institutionalised mechanisms that improve interoperability and coordination in dealing with prior emergencies, challenges and issues (Figure 1).

Figure 1: Public Health Surveillance Architecture envisioned by Government in 2035



(Source: NITI Aayog, 2020: 22)

[2] This includes five Central Public Sector Enterprises (CPSE) under the control of Department of Pharmaceuticals: Karnataka Antibiotics and Pharmaceuticals Limited (Karnataka), Rajasthan Drugs and Pharmaceuticals Limited (Rajasthan), Hindustan Antibiotics Limited (Maharashtra), Bengal Chemicals and Pharmaceuticals Limited (West Bengal), and Indian Drugs and Pharmaceuticals Limited (Haryana).

Investment in the healthcare sector is also expected to increase to at least three per cent in 2022. In mid-2019, around 125.7 million families enrolled as beneficiaries under AB-PMJAY, and can be utilised in about 16,085 hospitals across the country. This comprises 49.91 per cent of private hospitals and 49.61 per cent of public hospitals. Further, it was estimated that in the latter half of 2019, five million patients received treatment under the AB-PMJAY. The total number of medical colleges in the country increased by 38 per cent to 529 in 2019. Medical tourism, telemedicine and low-cost medical treatments have revolutionised the health sector in India. The industry was estimated to be around six billion USD in 2018, and further booming with the impact of COVID-19 and urbanisation in India. Meanwhile, medical tourism is estimated to have an annual growth rate of 18 per cent reaching nine billion USD in 2020. The huge costs of treatment in the developed countries, easy accessibility and availability of skilled health personnel are major reasons for this rapid growth (Ministry of Commerce and Industry, 2020).

Another prominent aspect is the digital transformation that is happening in health services delivery. The e-Sanjeevani telemedicine service in India under the Ministry of Health and Family Welfare crossed the one million consultations in mid-December 2020 and is expected to increase as well. It also improves the quality, accessibility, reduces the cost and time of access to health services, while boosting the health governance in the country. As of 14 December 2020, the States/UTs with highest number of teleconsultations are: Tamil Nadu (319,507), Uttar Pradesh (268,889), Madhya Pradesh (70,838), Gujarat (63,601), Kerala (62,797), Himachal Pradesh (49,224), Andhra Pradesh (39,853), Karnataka (32,693), Uttarakhand (31,910) and Maharashtra (12,635) (PIB, 2020; Reghunadhan, 2018b).

According to the World Bank, there is also a need to have a "more effective policy implementation, better management of resources, strengthened service delivery, openness, and transparency" (World Bank, 2020). Further, in the era of digitalization and technological advancements worldwide, there will be disruptive transformations in the health sector, in terms of cyber threats and related challenges (Dilipraj & Reghunadhan, 2018; Reghunadhan, 2018a). This includes telemedicine, virtual and augmented reality, Internet of Medical Things (IoMT), mHealth, digitally connected sensors and wearables, pandemic detection apps and tools, blockchain technology, big data analytics, artificial intelligence (AI), cloud computing, nanotechnology, thermal screening, facial recognition with masks, 3D printing etc., (Reghunadhan, 2019; Reghunadhan, 2020a; Reghunadhan, 2020b; Dialani, 2020; Mobidev, 2020). According to the World Bank:

> Emerging lessons from the immediate response point to the need to adapt models of government operations, service delivery and interactions with citizens, which include various options (like GovTech including MConnect, MCloud, Government Services Portal, MPay), and for modernization of services to citizens and businesses (World Bank, 2020).

Survey and Data Analysis: Impact on IHPs

A survey of IHPs in India was undertaken to analyse the impact of COVID-19 on health governance, and the livelihood and economic conditions. A survey was conducted from July 2020 to December 2020 in 48 pharmaceutical companies in India with responses from 223 IHPs. The sample population characteristics for the

age category of the respondents comprised 29-39 years (65.5 per cent), 18-29 years (21.5 per cent), 39-49 years (11.2 per cent), 49-59 years (1.3 per cent) and more than 69 years (0.4 per cent). The sample population comprised 96.9 per cent of males and 3.1 per cent of females. Of the total sample, nearly 77.1 per cent of the respondents were Graduates (Bachelor's Degree), and 18.4 per cent of the respondents were Postgraduates (Master's Degree). Meanwhile, the remaining sample population consisted of Diploma holders (2.7 per cent), PG Diploma (0.4 per cent) and Industrial Training Institutes/ Certificate Courses (0.4 per cent), and Secondary schools (0.4 per cent).

About 77.6 per cent of the participants felt that health is the biggest challenge during the period, while 74.4 per cent felt that employment conditions worsened. Interestingly, 69.5 per cent felt economic inequality has worsened, while 56.5 per cent of the participants felt poverty is a huge challenge. This has incidentally increased the impact on OOP, which besides the rise in CHE, can create a multiplier impact on the spending of the population. Two other challenges that have arisen are being stigmatised (58.3 per cent) and food crisis (39 per cent). About 58.7 per cent of the respondents felt that the impact of the COVID-19 pandemic has been worse, while only around nine per cent of the respondents felt positive about the situation. About 1.3 per cent of the participants have lost their jobs due to the crisis, while 9.4 per cent of the participants feel that there is a possibility of losing their jobs.

According to some respondents, the profession is amongst the worst hit, and they felt that in the current context, there is a lack of dignity for their labour. In many cases, IHPs are denied entry into the hospitals and mistreated by hospital authorities. According to one respondent, they often have to climb into hospitals and hospital cars entering the compound to meet with the doctors. The allowances have been reduced greatly by companies. Further, IHPs are denied travel allowance if they don't meet at least five doctors, and further restrictions and reductions have created constraints on the overall income. The 'alternate days' work system introduced recently by companies in effect halves the worker's monthly income, i.e., from an average 25-28 days to 14-15 days. Sometimes, IHPs are transferred to other states, which isn't viable in the current situation due to varying lockdown conditions among states. According to some respondents, this amounts to an 'arm-twisting' strategy to either make the IHP settle for a lower allowance/income in their state or even resign. This takes a huge toll on the respondents and their dependents, with huge implications due to the impact of COVID-19.

About half (50.3 per cent) of the respondents who lost their jobs felt they wouldn't get a new job soon. More than one-third (39.9 per cent) of the respective participants are unsure of getting a new job. About 65 per cent of the respondents felt that the opportunities for a new job or livelihood have worsened in the current scenario. The lack of job opportunities for the working population above 30 years and a graduate degree is an issue. The largely compact working hours, the increasing responsibilities and the economic burden of taking care of dependents leave almost no time for (re)skilling or other forms of (re)training. The lack of opportunities for higher education provides a huge roadblock to promotions or diversification of jobs. In comparison, only about 6.7 per cent of the respondents are optimistic about their current job and/or alternate jobs, despite having 18.4 per cent of postgraduates among the respondents. About 90.1 per cent of the participants felt that the impact of COVID-19 has changed the nature of their jobs, while only 1.3 per

cent felt otherwise. About 45.7 per cent of the participants felt that COVID-19 had a negative impact on their income, while 12.1 per cent felt positive.

Only 42.2 per cent of total participants felt that their income had neither increased or decreased during this period. About 1.8 per cent of the participants had the worst impact on their income, which saw a fall greater than 75 per cent. About 9.9 per cent of the participants saw a decrease in their income from 50 per cent to 75 per cent. Meanwhile, 35 per cent of the participants saw a decrease in income, ranging up to 25 per cent. About 22 per cent of the participants saw their income decrease between 25 per cent to 50 per cent. Interestingly, less than two per cent of the participants saw their income increase during this period. About 0.4 per cent of the participants saw their income increase from 25 per cent to 50 per cent. About 12.1 per cent of the total participants have at least five to ten dependent household members, while 27.4 per cent of the participants have more than 10 dependent household members. Thus, more than one-third of the total respondents have huge economic pressure to meet their families' requirements. About 22 per cent, 15.7 per cent and four per cent of the respondents have three, two and one household dependent(s) respectively. About 86.5 per cent of the participants have responded to being among the main sources of income in the family, on whom the family overly depends. The issue of lack of alternative skill sets, as well as transformation in the job market, is a huge challenge for the livelihood of IHPs. Moreover, the current healthcare scenario creates more challenges and issues for IHPs and their dependents. Meanwhile, 40.8 per cent of the participants responded to having no increase in their expenditure. About 53.5 per cent of the participants reported their financial situation to have worsened. In comparison, only 5.4 per cent reported their financial status to be stable and secure. About half the participants felt that their current financial status has remained more or less the same. At the same time, about 43.5 per cent felt that their financial situation has become worse, while the financial status of the families of 44.8 per cent of the participants became worse.

Around 82.96 per cent of the participants have responded that the relationship with hospital authorities has worsened. In comparison, about 53.81 per cent of the participants felt that the attitude towards them in health clinics has also worsened. About 35.9 per cent of the participants felt that the attitude of the doctors has become worse, while about 22 per cent felt that it has improved. About 57.4 per cent of them felt that the attitude of pharmacies has worsened. In comparison, the attitude of patients (about 60.5 per cent of the participants) and the company (about 42.2 per cent of the participants working for) have worsened. About 61 per cent of the participants responded that the option for a new job and/or livelihood opportunity for IHPs has worsened. Only 5.8 per cent of the participants felt that there are new jobs and/or livelihood opportunities available. About 79.8 per cent of the respondents did not feel that the GoI was undertaking enough measures to help the affected population (IHPs) during this crisis. Less than three per cent felt the GoI was doing enough. About 42.6 per cent of the participants believe that the GoI's performance is below par compared to other countries, while 21.5 per cent of the participants felt positive about the government's actions.

The COVID-19 pandemic is a huge challenge for health governance in India, particularly with implications for the IHPs. The impact on IHPs has been creating further complexities that are hindering and stagnating the traditional ecosystem of health governance in the country. Being the largest democracy and second-most

populous country in the world, the impact of the COVID pandemic often tends to be uncontrollable. This has a huge potential to create the largest human disaster since post-independence India. The country, besides challenges to its general population, is facing challenges to its health workers, particularly in the informal sector, who unlike the government sector or healthcare professionals are largely vulnerable to the social and economic impact of the pandemic.

Suggestions

The new era for India needs to be transformative, one which indulges in remoulding, recreating and revitalising key structures, institutions and personnel skills. According to the study, there is a need to stabilise the aspects of alternative and reskilling of IHPs in the country, who are directly linked to the healthcare sector and related governance of the country. A hugely populous country like India needs to strive on supporting its informal sector, which based on current estimates makes up nearly six lakhs in number. The issues faced by the informal healthcare sector in the country also indicate the potential unemployment issues related to the COVID pandemic, which besides the challenges on the healthcare sector can also affect the overall economy. The personnel skilling, reskilling and alternative skilling are all aspects that the State has to look forward to, particularly strengthening India's human resources, capital and economy. A focus on (digital) campaigning that enunciates the need for improving societal awareness, health and social sensitization, healthy lifestyle and diet should be undertaken to reduce vulnerability to diseases and pandemic-like situations in the future.

An important priority of the government should be to increase spending, in the likes of CHE, particularly that of GHE and thus emphasise P2H. This will improve testing, reduce incidences of the disease, as well as provide (re)skilling to the healthcare personnel and providers. The informal sector, especially the IHPs in India amounts to around six lakh which have a huge role to support health governance in India. The government should focus on improving the conditions of IHPs, which unlike fiscal pressures from the formal sector, do not have any financial implications or burden on the State. In terms of testing and activities to reduce incidences of the disease, many recent developments have come up in India. Ruger (2014) elucidates three areas for countries to "strengthen health systems through a political economy of health approach." This includes equitable growth of economies, good governance in public health and policy reform. This inevitably includes re- or alternative-skilling and (re)training of healthcare providers (including IHPs) in the country as a prerequisite, both in the formal and informal sectors. The informal sector has been more affected by COVID-19 and requires more attention, support and welfare activities. This has direct linkages to various facets of accessibility, accountability, responsiveness and the participative nature of health governance in the country.

The challenge arising from the human demography, particularly from unskilled and semi-skilled personnel can be transformed into an underlying opportunity of demographic dividend. The era of digitalization and cyberspace provides huge opportunities for the countries to initiate steps in the direction that focuses not just on digital literacy but digital skilling as well. The future of health governance lies in the interconnectivity with emergent technologies like the internet of things (IoT),

artificial intelligence (AI), 3D manufacturing etc., one which is overly dependent on the human capital of the country.

Besides the regulatory and legislative institutions within the country, India needs to integrate (within) and expand (outside) to be part of a world that moves towards transitioning and transforming the largely destabilising and undermining nature of the existing institutional and systemic options. This is a prerequisite in clearing the way for (re-)designing and implementing alternative structuralisation within the country, one which is expected to propagate and promulgate India's leap forward in relation to health governance and personnel reskilling. There is a need to evolve and integrate new models of health governance, accepted, standardised and implemented internationally. This does not mean completely replicating Western or developed models of health governance systems and structures in India, but one which entails case-by-case analysis and approach, scalability, possibilities of technological integration, coordination and interlinkages of various agencies, institutions and structures within the country.

A densely populated country like India needs to improve quantitative aspects of healthcare, which include the number of large-bedded hospitals, the number of healthcare professionals, skilling of existing healthcare professionals (formal and informal), utilisation and integration of emergent technologies in the health sector, as well as to provide alternative healthcare services to that of conventional/ traditional healthcare systems of brick-and-mortar. Despite the emergence of Digital India, the large demographic dividend in India creates the need to have alternative labour-intensive services that actively take part in improving public health infrastructure and accessibility. This is a prerequisite in the new and upcoming era, wherein healthcare services will transform towards a much more technologically integrated architecture under the Digital India programme.

Conclusion

COVID-19 pandemic is disrupting the conventional linkages of health governance and personnel in the countries across the world. This has largely destabilised and undermined many existing institutional and systemic options, currently available across countries. Interestingly, these institutional and systemic options are all designed and implemented based on the structural impediments faced over centuries. The new era in the post-pandemic period will need a transformative indulgence in remoulding, recreating and revitalising key structures, institutions and personnel skills. This is very evident in India as well. The second-most populous country and the largest democracy is facing its biggest challenge in healthcare over its seven-decade post-independence period. India's major concern seems to be the increasing number of infections; and the number of deaths. This calls for a need for quantitative improvement of public healthcare infrastructure and governance in India, one which is mainly hindered due to its huge population. Moreover, the issues faced by IHPs exacerbate this situation.

There is the need to evolve and integrate new models of health governance, accepted and standardised internationally. India faces a huge issue in terms of quantitative wherewithal to deal with the increasing number of cases, to mitigate the spread of the pandemic effectively, one which is largely dependent on the IHPs. The impact of the pandemic and the resultant societal barriers have all created huge

problems in various facets of their life. This in turn can create a multitude of hindrances to health governance in the country that despite the emergence of Digital India, is dependent on labour-intensive activities. Meanwhile, the focus should be on improving public health infrastructure and accessibility. Thus, it necessitates the need to improve awareness, sensitisation, and refocus on the healthy lifestyle and diet of the population, as well as the restructuring of the work culture of the IHPs.

The country has the potential to tap into opportunities and avenues to deal with a crisis with the resources at its disposal. But it requires political, institutional, economic and citizen-centric activities, within and around it. This includes capacity building of IHPs, to tackle (digitally transformed) new or modified jobs related to manufacturing, production and training; diverse fields like medical tourism and related start-ups. Besides revitalising and recuperating from the current crisis, India must create newer avenues and possibilities for re-engineering the post-globalized, multipolar world.

References

Brunelli, S., Falivena, C. & Anselmi, L. (2020). *Applicazione e potenziamento del PIP (Pandemic Influenza Preparedness Framework) in ambito OMS: un'arma in più per affrontare le fasi successive al picco da Covid-19*. Mecosan.113,9-15.

Dialani, P. (2020, December 10). Fascinating Healthcare Technology Trends For2021.*AnalyticsInsight*, https://www.analyticsinsight.net/10-fascinating-healthcare-technology-trends-for-2021/, accessed 11 December 2020.

Dilipraj, E. & Reghunadhan, R. (2018). Organisational Governance of Cyberspace in India. *Journal of Air Power and Space Studies*, XIII(1), 115-134.

Faugier, J. & Sargeant, M. (1997). Sampling hard to reach populations. J*ournal of Advanced Nursing,* 26, 790–797.

Gostin, L.O., Moon, S. & Meier, B.M. (2020). Reimagining Global Health Governance in the Age of COVID-19. *American Journal of Public Health*. 110(11), 1615-1619.

Heine, J. (2020). Still head waiters who are occasionally allowed to sit? Heads of mission after covid-19. *The Hague Journal of Diplomacy*. 15(4), 648-658.

Legge, D.G. (2020). COVID-19 response exposes deep flaws in global health governance. *Global Social Policy*. 20(3), 383-387.

Ministry of Commerce and Industry. (2020, November 21). https://commerce.gov.in/

Ministry of Health and Family Welfare (MoHFW). (2020). https://www.mohfw.gov.in/

Mobidev. (2020, December 11). *Technology Trends in Healthcare in 2021: The Rise of AI*. https://mobidev.biz/blog/technology-trends-healthcare-digital-transformation.

National Health Authority (NHA). (2020, November 21). https://pmjay.gov.in/about/nha.

National Institution for Transforming India Aayog (NITI Aayog). (2020). *Vision 2035: Public Health Surveillance in India*. NITI Aayog, 1-49.

Ortega, F. & Orsini, M. (2020). Governing COVID-19 without government in Brazil: Ignorance, neoliberal authoritarianism, and the collapse of public health leadership. *Global Public Health*. 1, 1257-1277.

Pai, R.R., & Alathur, S. (2020). Mobile health intervention and COVID-19 pandemic outbreak: insights from Indian context. *International Journal of Health Governance* [In Print].

Pavone, I.R. (2020). La pandemia globale di CoViD-19: riflessioni sul ruolo dell'OMS. BioLaw. *Rivista di BioDiritto*, 1(S),459-482.

Press Information Bureau (PIB). (2020,December 14). *eSanjeevani" telemedicine service records million tele-consultations*.https://www.pib.gov.in/PressReleasePage.aspx?PRID=1680535.

Reghunadhan, R. (2018a). Cyber Threat Landscape of Digital India: A Critical Perspective. *Journal of Polity and Society*, 10(1&2),37-50.

Reghunadhan, R. (2018b). *Integrating Space Technologies into River Basin Management: An Indian Scenario*. In Nawn, N. and Elamon, J. (Eds.), 2018. Sustainability, Institutions, Incentives: Voices, Policies, and Commitments: Conference Proceedings, 2018. Kerala Institute of Local Administration (KILA), 543-556.

Reghunadhan, R. (2019). *Big Data, Climate Smart Agriculture and India–Africa Relations: A Social Science Perspective*. In Pattnaik, P.K. et al. (Eds.), IoT and Analytics for Agriculture. Studies in Big Data 63, Springer Nature Singapore, 113-137.

Reghunadhan, R. (2020a). *Blockchain Technology and the Digital Society: Developments, Possibilities and Challenges*. In Kumar, V.V. and Savithry, T.K. (Eds.), The Inclination of Library Professionals to Modern Tools in the Knowledge Era. Kottayam, Kerala: Kerala Library Association (KLA).

Reghunadhan, R. (2020b). Ethical Considerations and Issues of Blockchain Technology-Based Systems in War Zones: A Case Study Approach. In Krishnan, S. et al. (Eds.), *Handbook of Research on Blockchain Technology*. Academic Press (Elsevier). 1,1-34.

Ruger, J.P. (2014). Global health governance and the World Bank. *Lancet. 270* (95967), 1471-1474.

Singh, J.A. (2020). COVID-19: "Science and global health governance under attack". S*outh African Medical Journal,* 110(6), 445-446.

WorldBank.(2020,November 26).Governance. https://www.worldbank.org/en/topic/governance/overview.

Worldometer. (2020,May 29). *Countries in the world by population (2020)*. https://www.worldometers.info/world-population/population-by-country/

World Health Organisation (WHO). (2020a, November 26). *WHO Coronavirus Disease (COVID-19)* Dashboard. https://covid19.who.int/

World Health Organisation (WHO). (2020b,January 30). *Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV)*. https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov) (accessed 1 August 2020).

World Health Organisation (WHO). (2020c, March 1). *Novel Coronavirus (COVID-19): Situation*. https://experience.arcgis.com/experience/685d0ace521648f8a5beeeee1b9125cd

World Health Organisation (WHO). (2020d, November 20). *Health Expenditure Profile*. https://apps.who.int/nha/database/country_profile/Index/en.