



UNDERSTANDING THE SOCIO-ECONOMIC IMPLICATIONS OF COVID-19 PANDEMIC UPON PHARMACEUTICAL SECTOR AND OTHER VITAL SECTORS IN INDIA – A REVIEW

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ABSTRACT:

The COVID-19 pandemic has come about in over 157 million affirmed cases, and nearly about 32 lakh death tolls (as on May^{2nd} 2021) all around the world. It has additionally started fears of an approaching financial emergency and downturn. Social separating, self-confinement, and travel limitations constrained a reduction in the workforce overall monetary segments and made numerous positions be lost. The effect of the coronavirus pandemic and the lockdown it activated is obviously noticeable in money related markets. Manufacturing units have shut down, and the need of items and fabricated items have diminished. Conversely, the requirement for clinical supplies has altogether expanded. The food area has additionally observed an incredible interest due to alarm purchasing and amassing of food items. The financial effect of the 2020-2021 coronavirus pandemic in India has been to a great extent problematic. In light of this worldwide flare-up, we sum up the financial impacts of COVID-19 on pharmaceutical sector and other vital sectors of the Indian economy.

KEYWORDS: Pharmaceutical Economics, COVID-19, pandemic, Industries, India

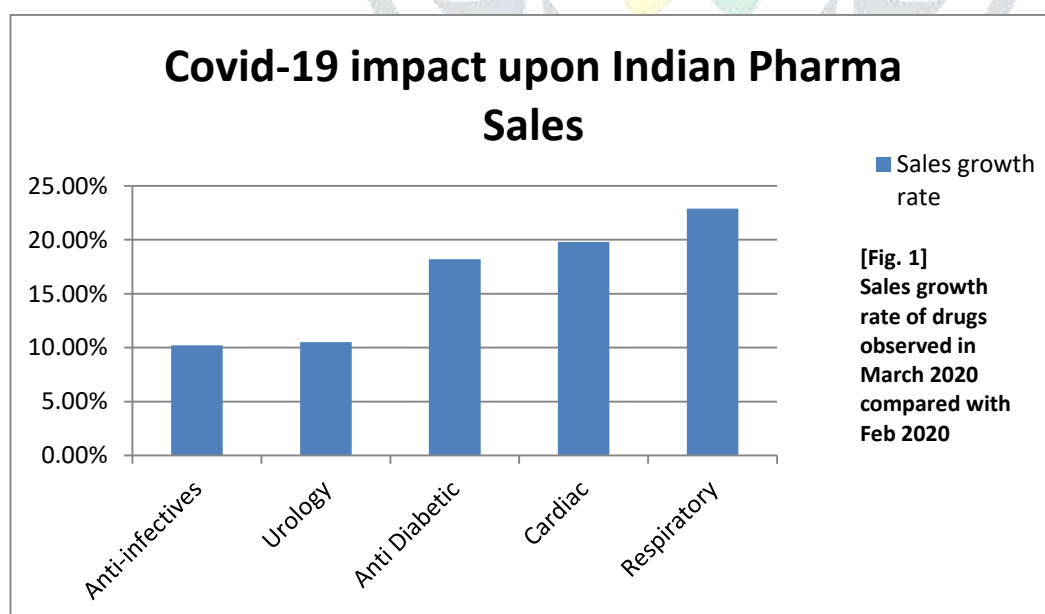
INTRODUCTION:

The outbreak of Coronavirus disease 2019 (COVID-19), first identified in Wuhan, the capital of Hubei, China, in December 2019, and since then having spread globally, has been recognized as a pandemic by the World Health Organization (WHO). India is widely affected by this pandemic, as on 2nd May 2021, more than approx. 2.15Cr. cases of Coronavirus have been confirmed in India with more than approx. 2,00,000+ deaths.

Mulling over its serious power, found with regard to India having the most elevated pace of thickness population in the world, the Governments, both at Union, and State level, started fundamental activities on war level to forestall the spread of this pandemic. It was even more so when it is realized this fatal illness has no therapeutic fix yet and vaccines are still under development phase undergoing trials all around the world, recently the oxford vaccine has just entered in phase II and might take more than several months before the actual vaccination therapy begins. The World Bank and rating associations had from the outset limited India's improvement for money related year 2021 with the most diminished figures India has found in three decades since India's budgetary movement in 1990. India's GDP gauges are downsized considerably more to negative figures, flagging a profound downturn. An American credit rating organization, Moody's Analytic slashes India's GDP development to 'zero' in FY21.

IMPACT OF COVID-19 ON INDIAN PHARMACEUTICAL SECTOR.

The Indian pharma industry has been a world head in generics both internationally and in local markets contributing altogether to the worldwide interest for generics as far as volume. Respiratory treatment drugs saw the most noteworthy deals across India in March 2020 contrasted with February that equivalent year, recording a development of about 23 percent. [Fig. 1]



This was expected to the coronavirus (COVID-19) pandemic and notwithstanding an across the country lockdown that disturbed appropriation of medications and doctor prescribed drugs. Then again, fragments, for example, dermatology, gastrointestinal, torment and analgesics, and immunizations demonstrated a decrease in deals during a similar time span. Made-in-India drugs provided to the created

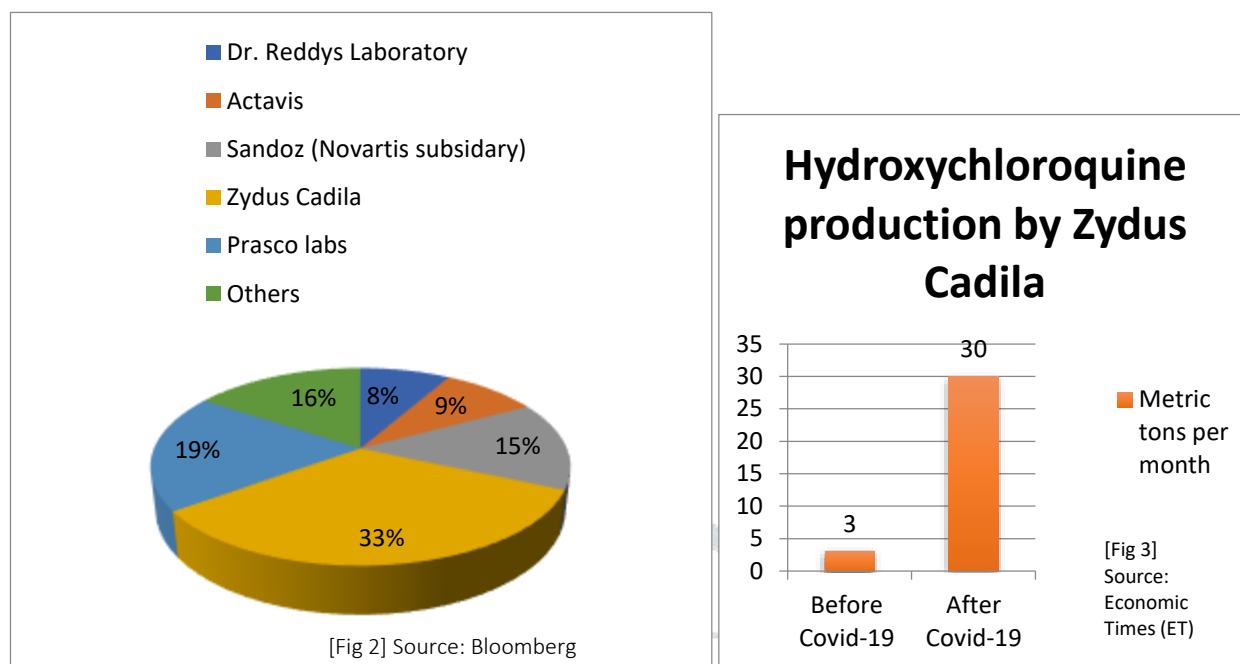
economies, for example, the US, EU and Japan is known for their security and quality. Lately, India has seen expanding rivalry from China, which it has had the option to use because of its inalienable cost advantage. Most of the APIs for nonexclusive medication fabricating over the globe are sourced from India, which additionally supplies roughly 30 percent of the conventional APIs utilized in the US. Be that as it may, Indian makers depend intensely on APIs from China, securing around 70 percent from China, the top worldwide maker and exporter of APIs by volume.

The impact of the SARS-CoV-2 coronavirus outbreak, COVID-19, has exposed the dependency of the Indian pharma sector on China for its API procurement. Supply chain disruptions and product exportation restrictions from India resulted from manpower shortages in China's manufacturing plants. This was caused by the quarantine policies adapted and adopted by different provincial governments in China in response to the virus. Supplies were additionally affected by the interruption of strategic and transportation frameworks, limiting access and development of items to and from ports. The present reliance of Indian pharmaceutical organizations on Chinese APIs is a genuine worry for national well-being security, provoking the Indian government to set up a task force to audit the interior API segment. A few key agents from the pharmaceutical business and NITI Aayog (an Indian government strategy think tank) recommended that encouraging the endorsements of pharmaceutical foundation advancements, giving expense exceptions and sponsorships to the turn of events and advancement of the pharmaceutical business center points could all profit the market.

HYDROXYCHLOROQUINE: 'the game-changer'

A Hydroxychloroquine, an inexpensive drug which is used as anti-malarial and anti-inflammatory agent has been identified by the US Food and Drug Administration as a possible treatment for the COVID-19 and it is being tested on more than 1,500 coronavirus patients in New York. Indian Council of Medical Research has suggested hydroxychloroquine, or HCQ, to be utilized as preventive medicine for Covid-19 patients in the high-risk group. Each Covid-19 patient supposedly needs a 14-tablet course. It has additionally suggested the utilization of the medication for health care workers associated with the treatment of the infection and for asymptomatic family contacts of laboratory affirmed patients.

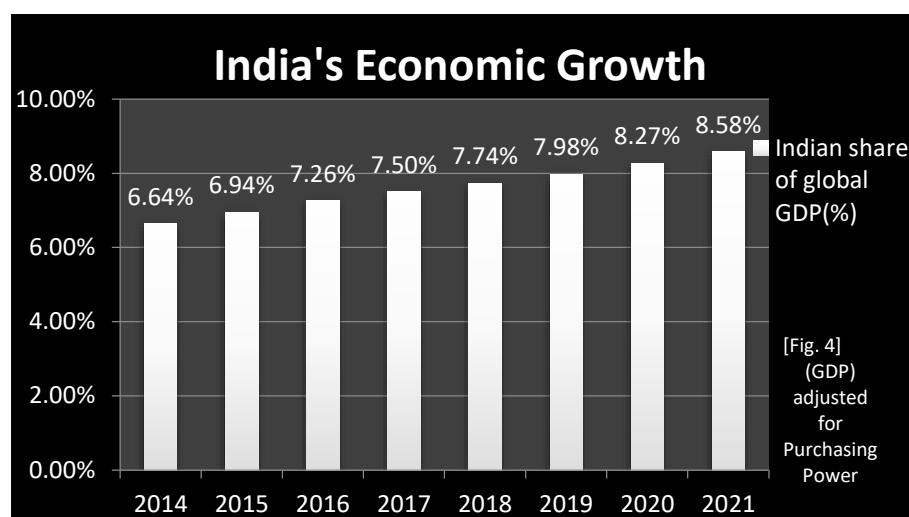
India is the biggest manufacturer of hydroxychloroquine, around 70% of the world's supply of hydroxychloroquine is met by India through various manufacturing labs [Fig. 2].



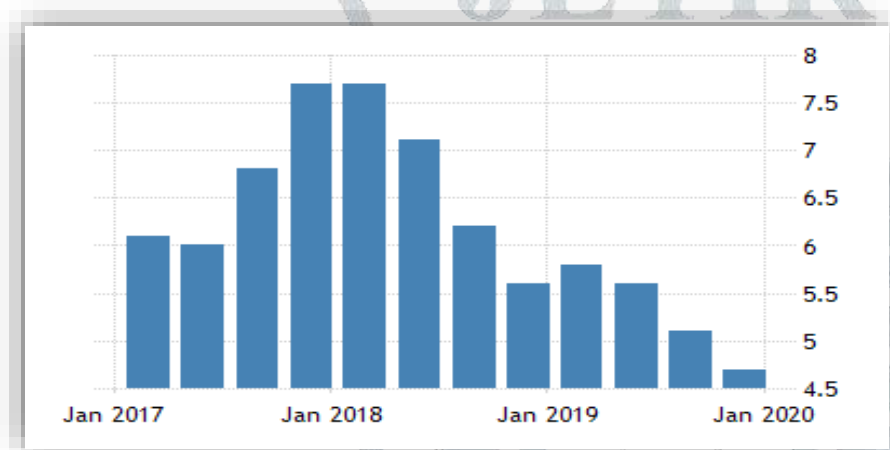
In developed countries like the United States the drug is not manufactured because of non-existence of malaria. Ipca Labs produces hydroxychloroquine across four to five plants in western India, while Zydus Cadila also manufactures across multiple plants. Zydus cadila ramped up their production of hydroxychloroquine from 3 metric tons per month to 30 metric tons (15crore tablets of 200 mg) per month [Fig 3]. Though Indian Government banned its export on March 25th 2020, but after US President called Indian Prime Minister requesting for supplies, the ban was reversed.

ECONOMIC SITUATION IN INDIA.

The Monetary exercises across India have endured a shot because of the continuous COVID-19 pandemic. Organizations and businesses have stayed covered for more than two months now in the midst of the progressing across the nation lockdown. In India up to 53% of organizations have indicated a certain level of effect upon the business because of shutdowns caused due to COVID-19 (FICCI survey). India's quarterly GDP was assessed to a decrease of more than nine percent among April and June. This was a decline from a five percent development in the start of 2020. The nation, on March 25, went into the biggest lockdown in world, limiting 1.3 billion individuals. The coronavirus (COVID-19) has been at the center of the loss of lives and livelihood on a massive scale. In India, the economy nearby the populace likewise requires nursing back to wellbeing. The evaluated cost of a full lockdown was an astounding \$26 billion. By 24 April the Unemployment Rate had expanded almost 19% inside a month, arriving at 26% joblessness across India, as per the "Center for Monitoring Indian Economy." Around 140,000,000 (14crores) Indians lost work in the lockdown. Over 45% family units the country over has revealed a pay drop when contrasted with the earlier year. The Indian share of global GDP (adjusted for purchasing power parity) was around 7.98% globally. [Fig. 4]



Forecasting a 5 percent contraction in 2020-21 (versus 1.8 percent growth forecast it made in April), S&P Global rating's agency said growth is expected to pick up to 8.5% in the following fiscal (up from the previous forecast of 7.5%). The Indian GDP is estimated to expand by 6.5% in FY23 and 6.6 percent FY24.[Fig. 5]



[Fig. 5] Indian GDP growth annual rate

COVID-19 IMPACT ON OTHER CRITICAL SECTORS OF INDIAN ECONOMY.

The Covid-19 pandemic has been an immense hit to India, particularly since numerous areas were at that point confronting an emergency when the infection storm hit. The Micro, Small and Medium Enterprises (MSMEs) are truly the foundation of every single Indian area, and frequently occupied with assembling and fare exercises — two key drivers of the Indian economy, practically all MSMEs are down and out because of the lockdown, chocking all creation exercises at significant firms across segments. There are a few reports that show how MSMEs are reeling under emergency and have no cash to pay their workers. The Aviation sector that associates countries over the world is seeing a whirlwind of cutbacks and pay cuts. A few laborers have been approached to go on constrained unpaid leaves by avionics organizations, who have been hit similarly hard as the travel industry. CAPA India, a main travel and the travel industry consultancy firm, said in a report a month ago that worldwide aviation movement has sunk more than

66% in the wake of the Covid-19 emergency. The vehicle division in India likewise has been compelled to stop key assembling movement and has prompted a sharp drop underway and deals. The real estate sector has likewise endured enormously because of the lockdown, ANAROCK Group in a report a month ago said housing deals will fall 25-35% while office ingestion will fall in the scope of 13-30 % on a year-on-year premise.

However, the Indian government reported a \$22.6bn stimulus package to help poor people who are influenced by the coronavirus flare-up. Government additionally plans to give wheat, rice, and pulses liberated from cost to low-income families throughout the following three months. Clinical protection worth 5,000,000 rupees (\$66,000) will be accommodated human services laborers including specialists, attendants, and paramedics. Relief and control of the episode of COVID-19 in India are in this way of foremost significance not exclusively to India yet to the world. Its ability to import crude materials, production, and fare medications won't just decide how most of LMICs will have the option to react to the episode yet will likewise influence high-salary nations. As a significant segment of the Indian economy, the condition of its pharmaceutical industry will likewise decide the effect of the pandemic on one-fifth of the total population.

CONCLUSION

India has demonstrated duty at the most significant level to guarantee the wellbeing of millions around the globe with a dynamic and versatile pharmaceutical industry. Excellent measures ought to be taken so as to help and keep up the operationality of the manufacturing plants. This new infection episode has tested the monetary, clinical and what's more, general wellbeing foundation of India and worldwide. There is quite possibility of future flare-ups of infections and pathogens which probably going to proceed resulting in worldwide emergency. Mankind didn't learned from past outbreaks like SARS and Ebola, we forgot that humans are not invincible and not the only organisms on this planet. Worldwide nations have invested much more in nuclear arsenal and weapons but none of the countries focused on controlling epidemic at such large scale. Thus along these lines, aside from controlling this outbreak, endeavors ought to be made to devise extensive measures to forestall such future episodes.

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REFERENCES:

1. Foster K, Ayittey, Matthew K, Ayittey, Nyasha B, Chiwero, Japhet S, Kamasah, Christian Dzuovor. Economic impacts of Wuhan 2019-nCoV on China and the world. *Journal of Medical Virology* · February 2020, DOI: 10.1002/jmv.25706.
2. The Chinese city of Wuhan was a breeding ground for an outbreak, experts say. The coronavirus has infected more than 870 people. Available from businessinsider.sg/wuhan-china-breeding-ground-for-coronavirus-outbreak-2020-1/ (Accessed May 3, 2020).
3. Cascella M, Rajnik M, Cuomo A, Dulebohn SC and Napoli RD: Features, evaluation and treatment Coronavirus (COVID-19), NCBI Bookshelf. A service of the National Library of Medicine, National Institutes of Health. Stat Pearls. Treasure Island (FL): Stat Pearls Publishing; 2020 Jan, Last Update: March 8, 2020
4. 2019-nCoV global cases by Johns Hopkins CSSE. Available from <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6> (Accessed February 3, 2020).
5. Kampf G, Todt D, Pfaender S and Steinmann E: Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *Journal of Hospital Infection* 2020; 104: 246-51
6. Pandemic influenza preparedness and response: a WHO guidance document. Geneva: World Health Organization; 2009. 4, The WHO Pandemic Phases
7. Kono M, Tatsumi K, Imai AM, Saito K and Shirasawa KTH: Inhibition of human coronavirus 229E infection in human epithelial lung cells (L132) by chloroquine: involvement of p38MAPK and ERK. *Antiviral Res* 2008; 77: 150-52.
8. Singer M, Deutschman CS, Seymour CW, Shankar-Hari M, Annane D, Bauer M, Bellomo R, Bernard GR, Chiche JD, Cooper-Smith CM, Hotchkiss RS, Levy MM, Marshall JC, Martin GS, Opal SM, Rubenfeld GD, van der Poll T, Vincent JL and Angus DC: The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). *Journal of the American Medical Association*. 2016; 315(8): 801-10.
9. Philippe J Guerin, Sauman Singh-Phulgenda, Nathalie Strub-Wourgaft. The consequence of COVID-19 on the global supply of medical products: Why Indian generics matter for the world? *F1000Research* 2020, 9:225; APR 2020
10. Maria Nicola, Zaid Alsafi, Catrin Sohrabi, Ahmed Kerwan, Christos Iosifidis, Maliha Agha, Riaz Agha. The Socio-Economic Implications of the Coronavirus and COVID-19 Pandemic: A Review. *International Journal of Surgery (IJS)*. 2020.04.018
11. Government of India Press Information Bureau: Indian Government amends Export Policy of APIs and formulations made from these APIs. 2020; (accessed May 19, 2020).
12. Dr. S. Gunaseelan, Dr. N. Kesavan. Business And Economic Recessions In India During The Covid-19 – A Review. *Xi'an Jianzhu Keji Daxue Xuebao / Journal of Xi'an University of Architecture & Technology* · April 2020. DOI: 10.37896/JXAT12.04/781

13. World Health Organization. Situation reports. Available at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>. Accessed 20 May 2020.
14. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395:497–506.
15. NIH shifts non-mission-critical laboratory operations to minimal maintenance phase [Internet]. National Institutes of Health (NIH). 2020 [cited 2020 Mar 21]. Available from: <https://www.nih.gov/news-events/news-releases/nih-shifts-non-mission-critical-laboratory-operations-minimal-maintenance-phase>
16. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *Int J Surg*. 2020 Apr;76:71–6.
17. Evans D, Over M: The Economic Impact of COVID-19 in Low- and Middle-Income Countries. *Cent Glob Dev*. 2020; (accessed May 3, 2020)
18. Prasanna Mohanty. Recession Reality Check (2019): Not recession yet but Indian economy isn't far from it either. *Business Today*, Current-economic-politics. Retrieved From: <https://www.businesstoday.in/current/economy-politics/recession-reality-check-not-recession-yet-but-indian-economy-isnt-far-from-it-either/story/391517.html>
19. Deloitte Insights. Banking and capital markets: Implications of COVID-19. Available from: <https://www2.deloitte.com/global/insights/economy/covid-19/banking-and-capital-markets-impact-covid-19.html>
20. India: Real gross domestic product (GDP) growth rate from 2009 to 2021 (compared to the previous year), Source: Statista (accessed May 21, 2020)
21. Bloomberg. “Charting the Global Economic Impact of the Coronavirus”. <https://www.bloomberg.com/graphics/2020-global-economic-impact-of-wuhan-novel-coronavirus/>. (accessed May 21, 2020)