

Community Pharmacists and their contribution in handling COVID-19 Pandemic in India.

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ABSTRACT:

The purpose of this study is to examine the responsibilities that community pharmacists in India can play in supporting public health initiatives during the present SARS-CoV-2 pandemic (COVID-19). In India, community pharmacists are very visible and accessible to the general people, and they have long been considered as a source for public health initiatives. On a state-by-state basis in India, the scope of pharmacy practice continues to expand and incorporate numerous health services. In order to identify and discuss roles that community pharmacists can play during this pandemic, a PubMed literature search was conducted to find published studies on SARS-CoV-2, COVID-19, pharmacist and pharmacy-based public health care initiatives in India. Finally, community pharmacists are experienced and capable public health specialists who are freely available and well-liked by the general population. India faced shortage of various drugs, protective gear, oxygen, but overcame all the hurdles with good leadership and excellent administration. India became the hub for manufacturing of pharmaceuticals and a major exporter to many countries. Our fellow community pharmacist played an important role during the epidemic, not only the epidemic but also the day-to-day needs are fulfilled by the pharmacists which makes people trust pharmacy for their health.

Keywords: Covid-19, SARS-CoV-2, Pharmacists, Public Health, Supply, Shortage, Remdesivir, favipiravir, Oxygen, Vaccines.

I. INTRODUCTION:

COVID 19's growing pandemic crisis has the potential to have a global impact on public health. Apart from the loss of life, the epidemic has caused economic hardship in several countries since last year. Scientists from several fields are working to find cures for coronavirus infection prevention and therapy. This section focuses on the contribution of scientists from the

pharmaceutical sector as a health care professional. Not only in India, but also around the world, registered pharmacists made significant contributions during the COVID 19 pandemic, and many countries recognize them as front-line health-care providers. From medication to personal care to the proper distribution of vaccine to desired individuals, the hospital pharmacist plays a critical role during the hospitalization of COVID-19 patients.

In December 2019, first ever case of SARS-CoV-2 (COVID-19) was reported in China, thereafter it was declared as an international health emergency by WHO. This made all the healthcare workers around the globe to step-up and show innovation, courage and adaptiveness, in this situation the community pharmacist was a very crucial connecting link between the suffering population and the medical practitioners. The community pharmacist have the ability to swiftly act in such situations by ensuring uninterrupted supply of medicines, by monitoring and resolving the drug shortage issues, by providing the pharmacy services at each and every corner, wherever it is needed the most, by spreading the awareness about the virus, what preventive measures to be taken, by educating people about all the protective equipment which are to be used during the epidemic, by promoting the clinical trials and convincing people to participate in them, by establishing small-scale sanitizers and disinfectant manufacturing units to ensure uninterrupted supply chain and by busting myths about the virus, its spread, about the medication, etc. This really did ease up the burden on the health care system during the crucial time of epidemic.

As we all know, the community pharmacy is one of the most trusted profession in the world, during the epidemic the health care systems around the globe were in brink of collapsing, in such time the community pharmacist played an important role of management, prevention and limiting the spread of the virus. During the epidemic, the community

pharmacists collaboratively and complementarily offered help to the overburdened doctors and nurses, however the potential of a pharmacist is always underestimated by both the physicians as well as the patients. Though the doctors have mutual respect about the community pharmacists but there is lack of communication between them.

Supply chain of protective equipment's, drugs and oxygen during the epidemic:

During the epidemic, the supply chain of the protective equipment and certain drugs was disturbed due to the drastic changes in demand and supply chains, during these times the community pharmacist played important role by providing uninterrupted supply of these necessities. The objective of a community pharmacists is to fill the prescription they receive. A pharmacist should priorities the filing of prescription from senior citizens, individuals with serious diseases like diabetes, cancer, heart disease, arthritis and psychiatric conditions.

The shortage of PPE kits came as a surprise, the demand skyrocketed during the epidemic as there were lot of patients being diagnosed with COVID-19 must have to be taken care of. The health care professionals were working tirelessly to save the lives of the patients. According to the Reuters agency report, India needed near about 38 million masks, 6.2 million PPE kits during the peak of the epidemic, that calculates to about 0.1 million PPE kits per day. This huge demand was achieved the manufacturers but that's not all, the community pharmacists helped by maintaining the supply chain.

Initially, when the COVID-19 was new to humankind, there was suggestions by different group of scientists to use Chloroquine (CQ) and Hydroxychloroquine (HCQ) for the treatment, this caused shortage of the drugs probably due to the stocking of these drugs by hospitals, patients and physicians. During this, community pharmacists made sure the supply don't stop. While India was facing the second wave of COVID-19, there was a time when the drug Remdesivir was at peak of its demand and patients were facing shortage of the drug, it was so bad that government had to ban export of it to other countries eventually. During these times the community pharmacists ensured regular supply of Remdesivir to the needy patients.

Favipiravir was also one of the drugs which suffered supply shortages, this was probably due the panic buying of the drug as it is used as a prophylaxis for the treatment of the COVID-19.

Many multinational companies like Glenmark, Cipla, Hetero, Avigan had to ramp up their production, but the demand was already out of the skies. Favipiravir was recently approved by DGCI (Drugs Controller General of India) for the treatment of mild COVID-19 symptoms like cough, fever, diarrhea, nasal congestion. Here also the community pharmacists worked hard to ensure the demand of the drug is fulfilled.

One more important reason for the shortages of these drugs was the hike in prices of raw materials for the drug. According to a report the price went up as high as 200% in about a month, the prices of raw materials or the API's which are required for making of Ivermectin, Methylprednisolone, Doxycycline, Enoxaparin, Paracetamol, Azithromycin, Meropenem and Pipratozo Had gone up by about 30% - 200%. This was mainly because China was hoarding the raw materials and India majorly import raw materials from China itself about 75% to be precise. Also, the cargo supplies from China were suspended for 15 days by Sichuan Airlines which were carrying the raw materials, this resulted in hoarding of the essential materials.

India also faced a major shortage of medical grade oxygen during the second wave of COVID-19, oxygen is important during the treatment of COVID-19 due to hypoxemia (When oxygen levels in the blood are low). Experts said that, India was producing 7000 tons of oxygen a day enough for everyone but it was industrial grade not the required medical grade oxygen though it could have been diverted as needed but most of the manufacturers are in west part of India which brings a problem for the transportation to the eastern states of the country, the Indian government stepped in at that time and did the required arrangements for the transportation.

Role of community pharmacists during the vaccination in India:

Recently India achieved the landmark of 1 billion vaccine dose administration accounting the first as well as the second dose of Covishield and Covaxin, as of writing this paper India has administered almost 1.20 billion doses of vaccines which include 77.7 million population with first dose and 42.2 million population with second dose, at present there are nearly 0.1 million sites conducting vaccination across the country out of which 99,274 sites are managed by the Government of India and 2,096 sites are managed by private entities. Out of all the vaccination the

age group between 18-44 has been vaccinated the most with about 69.3 million then the age group between 45-60 has been vaccinated with about 30.9 million and at last the age group between 60 and above has been vaccinated with about 19.1 million of population. With respect to rural and urban areas the rural area is surprisingly has more population vaccinated that is 70.1 million whereas the urban population is 19.8 million vaccinations. These numbers for a developing country like India. India also achieved the feat of administering 25 million doses in a single day which is quite impressive.

India is also a powerhouse when it comes to the production of pharmaceuticals, India's production accounts for nearly 70% of entire world's pharmaceutical production. India produces or will produce 9 different brands of COVID-19 vaccines that are Bharat Biotech's Covaxin Biological E's Bioical E, Dr Reddy's Sputnik V, Genova's HGCO19, Mynvax's Mynvax, Serum Institute of India's Covishield then at last ZydusCadila's ZyCov-D.

As we all know the manufacturing only is not enough for as to maintain the efficacy of these vaccines, to keep them administrable proper transport, storage and distribution condition are very important, here community pharmacist across the sub-continent plays a very crucial role for the storage and distribution of the vaccines, it is the duty of the community pharmacist to ensure the most efficient, proper supply of vaccines to the population via the sites conducting the vaccinations across the country. Community pharmacists played a crucial role during the vaccination India.

II. CONCLUSION:

The purpose of the paper was to let everyone know about the efforts made by our fellow community pharmacists pan India by showing the underlying capabilities a pharmacist has which the common world is unable to see or is over-showed by the efforts of doctors, during the epidemic, the pharmacists worked day and night to ensure the doctors and all the other healthcare professionals got the required equipment's for their safety, for their patients safety, the drugs which were impossible to get were made available by the fellow community pharmacists, the storage of vaccines was done by pharmacists even in rural areas of the country, whether it is making a vaccine or it's storage and distribution the pharmacists played as important role as other healthcare professionals during the epidemic.

Not only the Epidemic, but as a pharmacist you have to work hard every day and night to keep the country healthy, to get them what they need in any condition whether it may be different kinds of drugs, vaccines, protective equipment's and what not.

At the end of the day, wherever may be the situation, whatever may be the need, whether it is pandemic or not the pharmacists are always there for everyone which makes "PHARMACY ALWAYS TRUSTED FOR YOUR HEALTH".

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