

Pharmacist: A Healthcare Professional Serving as Frontline Warrior Completely Overlooked

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ABSTRACT

During the tough times of SARS-CoV-2 (COVID-19), the pharmacy professionals played a significant role by providing their services at various working stations and levels including hospitals, private clinics, community pharmacies, nursing homes, pharmaceutical industries, CROs and various health care programmes. However, the services provided by pharmacists were seldom mentioned and the professionals were not recognized as first line health care professional. The media, authorities and even general public have failed to appreciate the efforts of the pharmacy professionals as a part of essential healthcare team during the disaster. This review is focussed upon the contributions of pharmacists in patient care, healthcare services, patient care and well-being of the public during the COVID-19 pandemic. The various important tasks and roles played by pharmacist are described in the literature which have highly contributed towards a safer and healthier world. We hope that after going through the review and after having the idea about the roles and responsibilities that the pharmacist has played during COVID-19 will change the perspective of the people and the efforts of pharma professionals will be appreciated and recognized.

Keywords: Coronavirus, Global health, Pandemic, Pharmacists, Pharmacy.

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INTRODUCTION

COVID-19 is a fatal viral infection which is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The deadly viral infection has originated from Wuhan (China) in December 2019, and shaped out as the most threatening pandemic of the century as announced by the World Health Organization (WHO).¹ Currently as per WHO data there are 110.6 million cases of COVID-19 reported till date all over the world. There have been more than 2.6 million deaths across the globe making it one of the deadliest pandemic worldwide. The condition of India subcontinent is somewhat better if compared with the world due to certain measures of Indian government and health professionals.^{2,3} On current date India has 11 million total cases of which 10.9 million cases have been treated and are well now. The disease/infection have very complex symptomatic signs of which some are commonly seen that mainly includes cough, difficulty in breathing, fever, fatigue, and headache.⁴ It was reported that maximum patients developed very mild

manifestations but patients with previous history of disease like diabetes, kidney dysfunction, hypertension etc. may develop serious complications like pneumonia, respiratory problems, reduced oxygen supply, organ dysfunction and finally death.^{5,6}

There are various vaccines available all over the world which includes. The population must follow the rules and regulations issued by the WHO and the health ministry to abate the communication of this deadly decrease the transmission of SARS-CoV-2 virus so that the pandemic can be contained and slowly the number of cases can be reduced. Till complete specifications and treatment is available, social distancing, wearing of masks and proper hand hygiene should be followed strictly.^{7,8}

During COVID-19 pandemic people were endogenous and avoided outstation movement with the idea of diminishing the risk of transfer of the infection, but at the same time health workers were on the frontline doing their duties irrespective of risk associated with infection, and that of life.⁹ They have ensured that people have easy approach to health services and the adverse consequences of the pandemic could be minimized. Pharmacist being a versatile and dynamic healthcare professional played a significant role while directly acting and dealing with the community level services working in pharma firms dealing in vaccine formulation, evaluation and finally clinical trials of vaccine,



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patient care for chronic diseases, providing pharmaceutical care to COVID-19 patients in hospitals and providing education and information regarding vaccination programmes.¹⁰⁻¹² The pharma professionals have also been utilized and have given their services in providing reliable information for preventing, detecting, treating and managing coronavirus infections. But it was observed that the work and hard labour done by pharmacist is neither paid off satisfactorily nor recognized or appreciated.^{13,14}

This article is aimed to give an idea about the roles and responsibilities played by the pharmacists all over the world which has proved their ability and importance for health care system and could help in social and national recognition. It displays various areas of expertise of pharmacist and how the professionals have contributed at par for the benefit of Mankind.

Role of community pharmacists in COVID 19

Pharmacist is the most approachable and easily accessible health professional to the community. This is very true in cases of disasters and endemics and pandemic situations. Despite stringent lockout controls as part of Vital commodities and products, neighbourhood pharmacies remained open to the public throughout the pandemic. Pharmacists, as highly decorated professionals, played a critical role in reducing the complications that may have arisen as a result of the system's unexpected, undue additional burden and limited access to healthcare providers. In case of developing and middle- and lower-income countries, pharmacist is the backbone of the health care system as it offers clinical advice and lowered cost of treatment.^{15,16} While there was shortage of PPE kits and other protective measures, pharmacy professionals continued to provide their services to the patient directly. Patients received a variety of OTC drugs free of charge from community pharmacies. Patients have been trained on telehealth programmes, and pharmacists have been assessing patients that have chronic illness and are on continuous drugs, as well as offering guidance and rational therapy for minor ailments.¹⁷

The key responsibilities of community pharmacists have been summarized in Figure 1. The training programmes helped to improve the efficiency and technical skills of pharmacist were better developed and resulted in maximizing the efficiency of health care system.

Role of hospital pharmacists in COVID-19

Hospital pharmacist has played a very critical role during this pandemic. The ICU nurses, physicians, and respiratory therapists have contributed high time and have been in the lime light but at the same time hospital pharmacists silently worked day and night. The hospital pharmacist has participated in inpatient rounds, ensured the maintenance of sufficient stock of medicines for supply to support ICU beds. The professionals through implementation of new softwares, tools and strategies

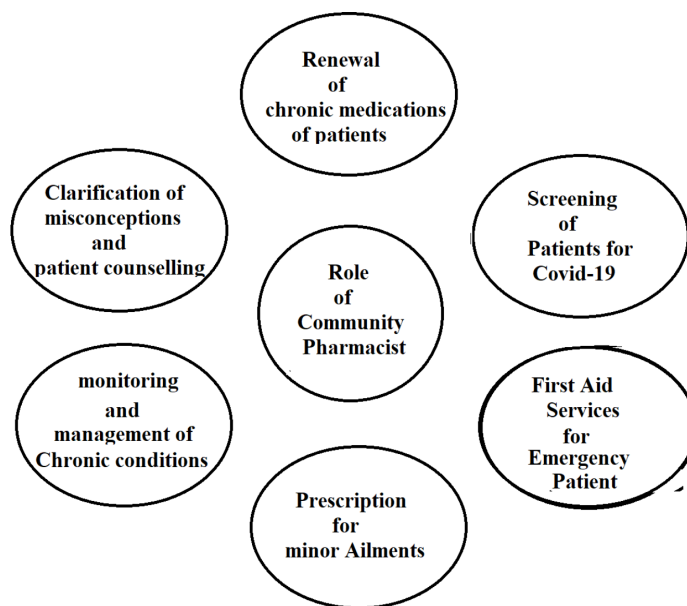


Figure 1: Different roles of Community Pharmacist during COVID-19.

have worked hard to update and maintain Main drug store so that emergency drug requirements if any could be met immediately and critical shortages could be avoided.¹⁸ Hospital pharmacists also participated in various stewardship programs and are directly involved in planning and responding to pathogen outbreaks, as it was having maximum probability that secondary infections could develop in covid patients causing life threatening conditions. Hospital pharmacists have also utilized their skills and knowledge in the process of drug response monitoring as well as in developing treatment protocols with other medical staffs as a part of Therapeutic planning Committee in COVID-19 patients.¹⁹

Additionally, pharmacists have assisted in the interpretation of COVID-19 test findings, the exploration of potential drug therapies or uses, and the provision of prescription management advice to their colleagues.^{20,21} Although there is currently no cure for COVID-19, clinical trials are evaluating new therapeutic options such as hydroxychloroquine, methylprednisolone, and Remdesivir. Hospital pharmacist has played a variety of roles and responsibilities (as detailed in Figure 2) in the war against COVID-19 pandemic and irrespective of constant exposure to the virus have served the mankind with utmost care without the same recognition as frontline workers.²²⁻²⁵

Role of industrial pharmacist in COVID-19

Industry professionals work in wide variety of profiles, including research and development, formulation development, clinical trials of new drugs and vaccines and also in various regulatory aspects related to marketing and authorization of drugs and vaccines.^{26,27}

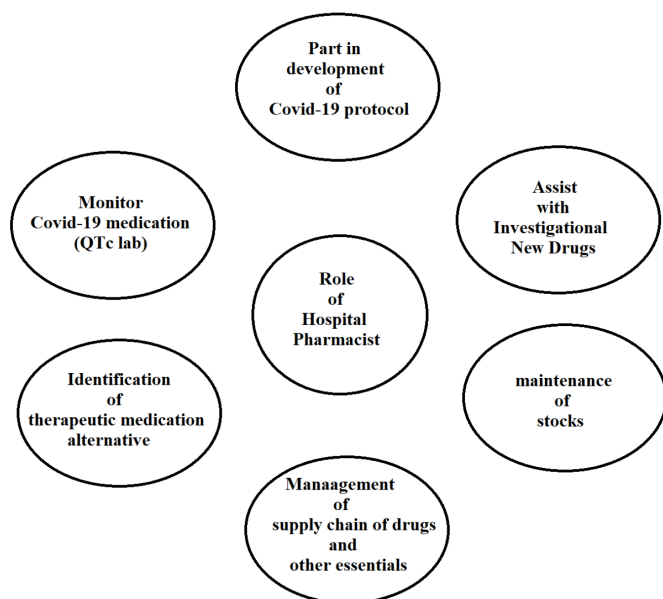


Figure 2: Different Roles played by Hospital Pharmacist in COVID-19.

Indian pharmacists have produced the largest stock of drug Hydrochlorothiazide when it was needed most and the drug was exported to various countries of the world including U.S.A and Russia. In the pharmaceutical industry, many pharmacists work in different profiles and at different positions to produce drugs and vaccines which are to be utilized for prevention and treatment of disease and disorders. In the case of the COVID-19, industry pharmacists were heavily involved in the development of a new coronavirus vaccine. The industrial pharmacist plays his role in development phase of new vaccine, its clinical trials and its evaluation phase on various quality parameters.²⁸ They are also playing critical role in preparation and fabrication of sanitizers, handwashes, PPE Kits and other tool kits which are very much needed in the critical hours at a tremendous excessive amount which was supplied by the pharmaceutical industry. There are various pharmaceutical companies including Bharat Biotech, Serum Institute, Panacea Biotech, Indian immunological, Mynvax, Zydus Cadila and Biological E which are developing COVID-19 vaccine currently and the trials are in different phases. The vaccines produced by Bharat Biotech (COVAXIN) and AstraZeneca (COVISHIELD) developed by Serum Institute is already in market and is approved by the government.^{29,30}

Role of pharmacist in providing information and education

Vaccination services have been vigorously supported by all pharmacy practitioners at different levels and positions. Pharmacists are also interested in educating patients of their daily vaccinations, which are achieved by various mediums such as mail and computerized phone calls.³¹⁻³³

It was seen in various instances previously that certain population is hesitant to take vaccine due to various reasons and it is the

biggest threat to the immunization campaigns. WHO has reported Hesitancy to vaccines as one of the biggest threats to global health recently. Pharmacists should build a communication strategy to educate patients and help in informed decision-making to overcome vaccine hesitancy. The communication strategy should include an open-access questionnaire template that allows the public to provide input and receive responses, as well as factors that contribute to noncompliance, such as concerns about adverse outcomes, identifying root causes of the target population's hesitancy, and identifying factors that contribute to non-compliance.³⁴⁻³⁶ Pharmacists played a significant role at different levels as shown in Figure 3 in educating and awakening of common man.

Role of pharmacist as frontline warrior in COVID-19 vaccination drive

There is various community pharmacy-based immunization campaigns which are very crucial as they may be associated with risk of coinfection of SARS-COVID-19 Infection. Community pharmacy centre are easily accessible to public and are very safe place to receive vaccines at a very genuine cost. Community pharmacist played a great role with their knowledge and skills for vaccination and were preferred by patients due to their ease and comfort.³⁷ Pharmacists can systematically evaluate vaccination histories, identify immunization gaps, and provide sufficient time to discuss the various factors/sides associated with vaccine before its administration. The most contributing factor for their popularity is that, no appointment is required, and the patient can contact and reach any time.³⁸ The authorities all over the world have clearly revealed that increased accessibility of the vaccine was vital to the COVID-19 response effort, and as a result, various regulatory agencies of different countries have issued guidance and training programmes for pharmacists to order and

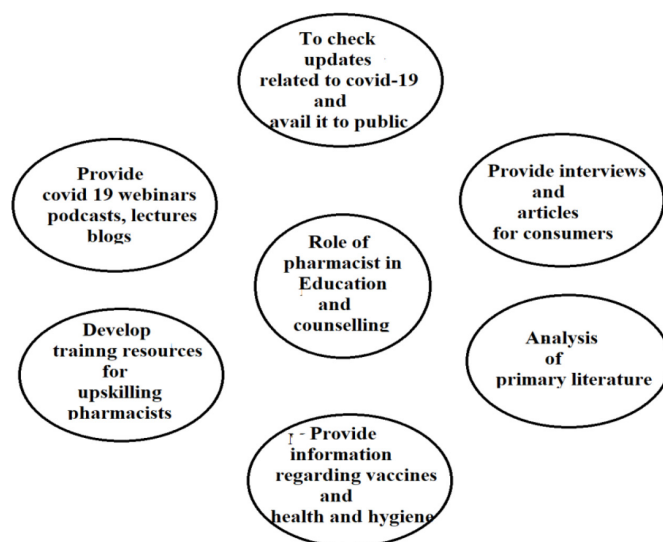


Figure 3: Different roles and responsibilities of pharmacist in relation to education and information.

administer the vaccine when it becomes available. Accessibility to pharmacists is vital in administering the COVID-19 vaccine in order to achieve high vaccination rates.³⁹⁻⁴¹

Ethical issues faced by pharmacists

It was reported in various research reports that there are common set of ethical dilemmas faced by pharmacist all over the world. The most common of them are reported below:

Demand of an OTC DRUG by a customer irrespective of the knowledge and even non-persistence of the problem. Pharmacist is of the opinion that the drug is not needed by him/her.

Non-availability of specific brands at the pharmacy prescribed by a physician. The pharmacist has clinically equivalent generic brand but could not dispense it.

Demand of drugs by the patients of controlled substance nature but the pharmacist is clearly of the opinion that the day is greater than the date specified in the prescription.

Demand of an OTC medicine which the pharmacist thinks that the person is abusing (may be this appears likely after speaking to him/her about it) and the customer does not want an alternative.

Demand of a hormonal contraception pill by a woman who the pharmacist thinks that she is not married and even if she is below age of 18.

The surveys conducted all over the world presented this ethical problem which pharmacist faces in day-to-day life. It was found that the major reasons cited by the professionals to compromise on ethical grounds are:

To satisfy patient' expectation about them.

To respond to doctor's request and as they have major control over the health care sector.

To secure their job was the third reason beneath above two to compromise on ethical grounds.

To meet economics target from employer was the least associated issue.

On studying these different reasons for compromising in ethical dilemmas by pharmacists reflects their different level of ethical knowledge and lack of regulations covering these problems. There is a need of imparting ethical knowledge and strengthening the rules and laws of the land regarding the same. It should be made sure that the pharmacists should have clear references and protocols in dealing with ethical dilemmas. There is a need for regular update and strengthening of regulations which can protect patients and fulfil their needs. At the same time the pharmacists should be properly trained and should be appreciated at times regarding code of ethics knowledge and awareness.

CONCLUSION

Pharmacists have worked day and night and have provided essential frontline care to COVID-19 patients in hospitals, clinics, community pharmacies, long-term care, nursing homes, national and public health programmes and in different pharmaceutical industries at various roles. The complexity of diagnosing and treating COVID-19 patients in the hospital, post discharge or as an outpatient, requires a multidisciplinary team of experts which includes pharmacists. The pharmacist has provided their services at various levels and through various ways during the whole pandemic period. The news media, the public, and politicians often overlooked pharmacists as essential frontline health care providers during the COVID-19 pandemic but the list of contributions and the roles and responsibilities played by pharmacists provided in this article can change the perception of the different people and the professionals will get the respect and recognition which they truly deserve.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

SARS: Severe Acute Respiratory Syndrome Coronavirus; **WHO:** World Health Organization; **PPE:** Personal Protective Equipment; **OTC:** Over the Counter Medication; **ICU:** Intensive Care Unit.

SUMMARY

Pharmacy professionals played a significant role by providing their services at various working stations and levels including hospitals, private clinics, community pharmacies, nursing homes, pharmaceutical industries, CROs, and various healthcare programs during the Pandemic of COVID-19. However, it was a matter of deep pain and self-interrogation that pharmacists were seldom mentioned and recognized as firstline healthcare professionals by any of the government and organizations working in India. The media, authorities, and even the general public have failed to appreciate the efforts of the pharmacy professionals as a part of the essential healthcare team during the disaster.

This is an attempt to recognize and loudly pronounce the contributions of pharmacists in patient care, healthcare services, and the well-being of the public during the COVID-19 pandemic. We hope that going through the review and having an idea about

the roles and responsibilities that the pharmacist has played during COVID-19 will change the perspective of the people and the efforts of pharma professionals will be appreciated and recognized.

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