

Extended Health Services of Pharmacists: Role in COVID-19 Management

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ABSTRACT

COVID-19 is creating a chaotic scenario all over the world. Due to the unavailability of approved therapy, the number of affected cases is escalating day by day. Different components of the healthcare system have been consistently working in different settings for its containment. Pharmacists are one of the healthcare experts, who are working on the front-line. In this review, we aimed to evaluate the activities of pharmacists as a healthcare professional in disasters such as; COVID-19 management. The focus on services offered by pharmacists has shifted from traditional dispensing and compounding to patient-specific over a period contributing to the quality use of medicine and primary care. Pharmacists are thus, considered essentially one of the main pillars of the healthcare team for the provision of extended health services (EHS), for instance, the effective management of COVID-19. They are working from community to clinical setting. Practicing tele-pharmacy health services, they can reach out to remote places as well. Utilizing their expertise on clinical as well as managerial aspects, they have proved to be dynamic professionals in such a global health crises. Adequate training, inclusion of disaster management in the curriculum of pharmacy, support from the legislative body, and inter- as well as intra-professional collaboration are the key factors for professional development and recognition.

Key-words: COVID-19, Extended health services, Pharmacists, Health care team, Professionals

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INTRODUCTION

With the deadly and contagious nature, COVID-19 pandemic is causing panic throughout the globe. It has shaken the health care system of every part of the world. Since its first outbreak in late December 2019, different types of treatment approaches are being

practiced for its management.¹ The number of affected cases and deaths is continuously on the rise in many countries despite efforts for its containment. Lock-down, social distancing, triaging, quarantine, contact tracing, and testing of suspected cases are among such measures practiced throughout the world.² Every

component of the healthcare system has been activated for the proper management of COVID-19 along with different stakeholders. Healthcare professionals are still working consistently for the development of an appropriate agents for prophylaxis and treatment of this disease as well. In this context, pharmacists as a vital member of the health care system, are working as a front-liner by serving patients in different settings from communities to clinics.³ From consistent supply chain management (SCM) of drugs and pharmaceuticals, preventive measures to patient care with rational use of medicines; pharmacists contribute significantly to the management of such disasters. As an extended health services (EHS), pharmacists are constantly providing care for patients in disaster management, preventive measures, health service outreach (HSO) programs, home medication review (HMR), tele-pharmacy health services, and specialty care for specific disease conditions such as chronic disease management (CDM).⁴ With this expertise, pharmacists are among such professionals who are fit for both clinical and managerial aspects in the health care system.

MATERIALS AND METHODS

The electronic databases such as Google Scholar, PubMed, ScienceDirect along with different data bases were searched using specific keywords as “extended health services”, “disaster management” and “pharmacists in COVID-19” for preparing this narrative review. Related experts in the field were also consulted. Literatures published in English language only were included.

Extended health services

The concept of clinical pharmacy in the 1960s has caused a paradigm shift in the practice of pharmacy. From the traditional role of compounding, dispensing, and manufacturing; pharmacists started providing pharmaceutical care on the bedsides of patients in clinical settings as well.^{5,6} The recognition of the pharmacy profession as the healthcare profession for rational use of medicine thereafter geared up the momentum. EHS has been a milestone for the recognition in practice in different settings with dynamic approaches. The challenges and responsibilities are also added up in professional practice. Pharmacists practice HSO program for providing awareness and treatment at local level in different remote places. Dissemination of awareness in preventive aspects of different kinds of communicable and non-communicable diseases is another part of EHS. Preparedness, mitigation, response, and recovery as four approaches in pre-, during, and post- phases of natural and man-made disaster management are definitely a vital way in health care service.⁷ Pharmacists are practicing HMR where they provide home visit and manage drug therapy of patients. With CDM, pharmacists are involved in the management of diseases in different settings such as clinics, community, and disaster related site on a timely basis. Now, a relatively new concept of tele-pharmacy health service has demonstrated its efficacy in case of limited number of resources and amid lock-down for rendering healthcare services to people.⁸

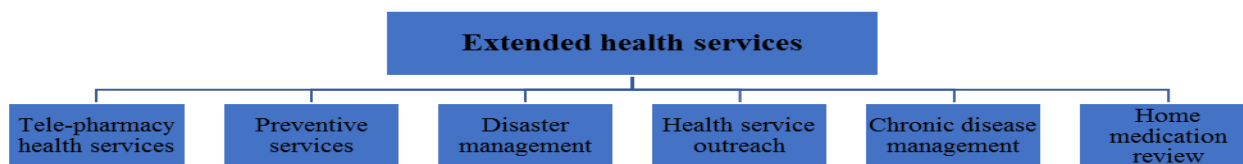


Figure 1: Various aspects of extended health services

PHARMACISTS AND COVID-19

There are total 88,383,771 COVID-19 cases with a total death tally to 1,919,126 around 216 countries of the world as of 24 October 2020.⁹ Different measures are taken for the appropriate management of COVID-19 in the respective settings. Pharmacists as one of the

healthcare professionals have been involved in all the steps of COVID-19 management from pre-COVID phase to post-COVID phase.¹⁰ The first responsibility of pharmacist is to ensure the safe, effective, and rational use of medicines.¹¹ However, the roles of pharmacists varies in setting, situations, and various parts of globe.¹²⁺

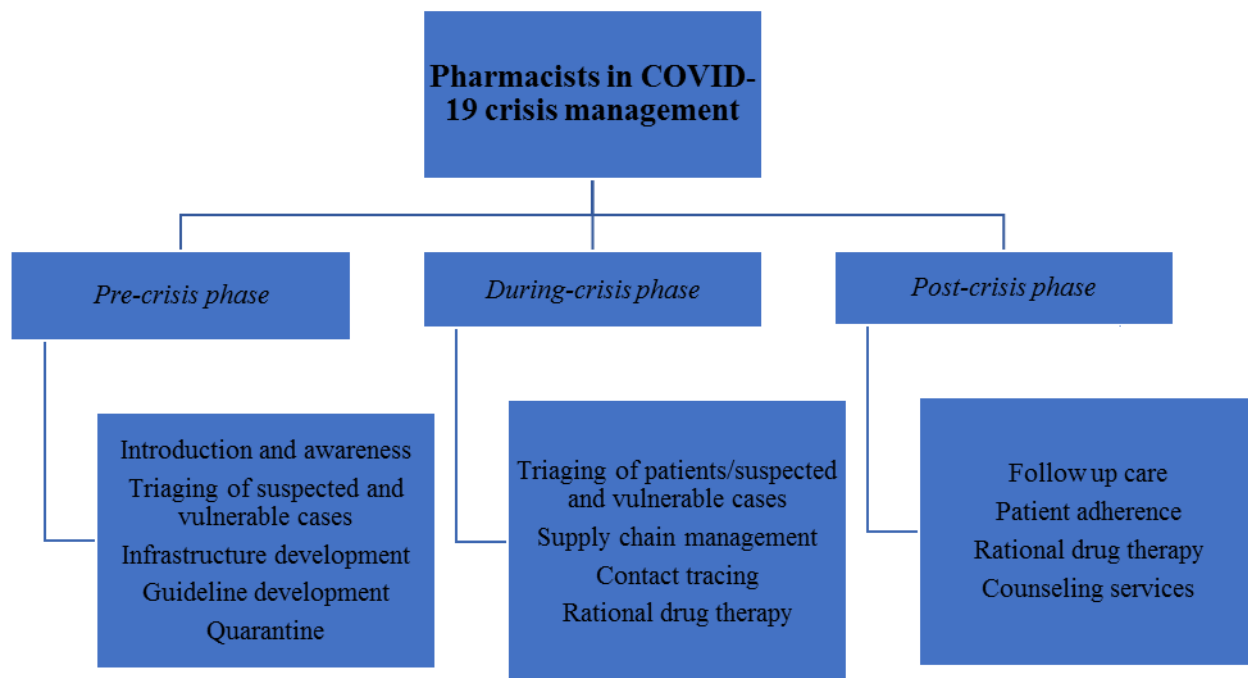


Figure 2: Various roles of pharmacists in COVID-19 management

Due to the lockdown approach and reduced manpower, community pharmacies almost all over the world are open and vigilant. Moreover, outpatient services in clinical settings are not being highly practiced amid COVID-19¹³ as those facilities have been suspended by the governing body. Pharmacists are thus directly dealing to the mild ailments of patients and are assisting them to refill their prescriptions. For primary healthcare needs, people visit pharmacies as these are easily approachable healthcare set-up, thereby increasing traffic in pharmacies. Pharmacists in community settings are thus highly exposed and are believed in the first place to be in contact.¹⁴ Consequently, this

has decreased the direct burden and pressure on other general practitioners and other areas of health care.¹⁵ Pharmacy professionals are working as a front-liner beating COVID-19 pandemic.¹⁵ Similarly, pharmacists in the clinical settings are playing their role to prevent and control infection and are involved in patient care.³ Pharmacists from other settings such as governmental and non-governmental organizations are also involved in the relief effort and in humanitarian aids.¹⁶ Pharmaceutical care intervention has attributed positive therapeutic outcomes to patients.¹⁷ These interventions have improved not only the quality of life of patients but also saved their lives.¹⁸ Various roles that

pharmacists could play in COVID-19 crisis are mentioned in figure 2.

Pre-crisis phase Pharmacists can provide primary, secondary, and tertiary prevention services by raising awareness on the disease through promotional materials such as posters, brochures, and audiovisual media. They can disseminate drug information and can improve population health by performing general health screening. Similarly, pharmacists can offer their role in guidelines development; quarantine and contact tracing services. They can educate and establish a health care desk for COVID-19 patients and can provide referral and recommendations for community members.¹⁹

During-crisis phase Pharmacists can provide triage services through assessment of patients by deciding whether their illness requires to be addressed urgently or how soon is the treatment required.²⁰ Thus, the need of isolation or quarantine can be determined easily depending upon the severity of symptoms. Contact tracing service can also be given at this phase. They can promote the rational use of medicines and can also assure smooth pharmaceutical SCM management; so that population is benefited by the uninterrupted and consistent flow of medications and services.²¹

Post-crisis phase During crisis; anxiety and stress are widespread.²² These have been found to have negative effects on medication adherence and disease outcome.²³ Thus, pharmacists can contribute to identify and resolve such issues of patients by proper counseling. They can also provide authentic information to promote rational use of medicines; as information channels and social media are claiming many potential remedies for the treatment of COVID-19, though there are no approved medications yet. Wrongful intake of such claimed medications can lead to drug interactions and can cause potential

harm. Thus, pharmacists can play their role to prevent the irrational use of drugs. During the period of lockdown, pharmacists can constantly remind their patients to maintain a healthy life style and to adhere to their medicines through direct contact or tele-pharmacy health services.²⁴

Services in the Developed versus Developing World

Pharmacists are recognized and considered as healthcare professionals in developed countries, playing a pivotal roles in the delivery of primary care. This profession, however, lacks the government's interest in low and middle income countries (LMICs) and is thus underutilized.²⁵ This tacit response to recognition of the pharmacist's potential is responsible for the lack of interest of pharmacy graduates to opt community as a professional career.²⁶ During the current pandemic, they have been delivering medications at home as part of value added services and are responding to patients that come to pharmacy with various ailments like in other days. Despite challenges such as direct exposure to the public, limited personal protective equipment (PPE), lack of incentives, and weak regulatory enforcement; pharmacists are still working with a greater pace as front-liner in healthcare system of LMICs. Keeping in view the shortage of healthcare facilities and health care human resources in developed countries that are hit severely by COVID-19 pandemic, it is deemed necessary that LMICs develop proper modalities to deal with serious catastrophes forehand. The government must facilitate pharmacists to ensure the uninterrupted SCM system of medicine and reliable dissemination of information to the public on COVID-19 management. The authorities must also take responsibility of adequate supply of PPE for pharmacists' protection as they are exposed to the public and if infected with COVID-19,

they can transmit the infection to a larger population.

Need of Development of Pharmacy Practice Guidelines for COVID-19

Though many authorities and organizations are making arrangements to provide PPE to other healthcare professionals like physicians, nurses, and paramedics involved in hospital settings; however, the least attention has been paid to the protection of pharmacists. With the closing of the public outpatient department, more burden has been shifted to pharmacies especially in the community settings; the eyes of concerned authorities have not reached there in many parts of the world, particularly in LMICs. Only a few countries such as England, New Zealand, United States, and Pakistan have prepared proper protection guidelines for pharmacy teams. Keeping in view the current scenario, proper protection guidelines for pharmacy teams in all countries must be prepared and adopted within the scope of the individual country’s laws and regulations.

Evolution of Tele-pharmacy Health Services

Since physical distancing has been given the greater importance to prevent contracting from coronavirus infection. This has opened the door to tele-pharmacy health services around the world. To reduce the burden on healthcare personnel and to overcome the limitations of not being able to access healthcare facilities in this pandemic; such an innovative approach can be the best option. Different countries have already initiated services such as; tele-medicine services to reach out remote places with low physician to patient ratio.²⁷ Provision of tele-medicine during this crisis can reduce psychological issues as anxiety in patients with chronic diseases. The tele- pharmacy health services can provide basic consultation by way of tele-health services, which can help shed the burden on other health workers engaged for COVID-19 and manage the stress on patients with comorbid conditions.⁸ Such service can be utilized all the stages of COVID-19 management (Figure 3).

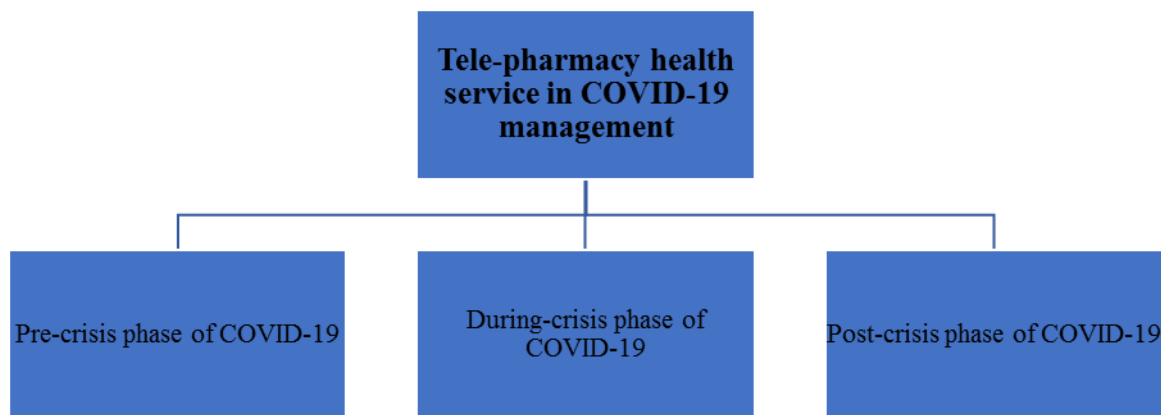


Figure 3: Area of tele-pharmacy health services in COVID-19 management

SWOT ANALYSIS

Strength Pharmacists are the most accessible healthcare professional throughout the globe and are the key component of health care team.^{28,29} The interest and willingness of pharmacists for patient services at the time of

crisis can be regarded as a major strength. With the academic degree and experimental training of the profession, they are being able to accomplish multiple tasks ranging from management to clinical aspects. The scope of pharmacy practice has been expanded beyond

a traditional roles covering a wide range of patient care activities in different clinical and community settings. In EHS, pharmacists provide services such as HSO, CDM, HMR, preventive services, disaster management, and tele-pharmacy health services. Pharmacists in developed countries can review prescriptions, initiate drug therapy in specific conditions, interpret lab tests, administer vaccines, and participate in disease management programs.^{30,31} Even LMICs have regarded pharmacy practice as one component of health care system.³² Pharmacists are now practicing in a clinical settings for the care of patients.³³ Thus, pharmacists can actively play their role in promoting rational drug use, pharmacovigilance, COVID-19 management, pharmaceutical SCM, and tele-medicine services before, during, and after crisis.

Weakness Due to the inadequate training and lack of curricula regarding disaster management in pharmacy education, pharmacists in many places of the world are not actively involved in such type of activities.³⁴ Also the lack of harmony between pharmacy institutions producing pharmacists and organizations utilizing them is generating a serious issue such as acute shortage of pharmacists in some regions while in some there is increased competition for jobs leading to unemployment. Shortage of pharmacists causes inequality in accessing medication and medicine expertise.²⁹ Lack of inter-professional coordination between physicians and pharmacists and intra-professional coordination within a pharmacist fraternities is yet another weakness.³⁵ Limited resources and insufficient pharmacy workforce, lack of training, and scarce logistics are some of the common barriers to the provision of EHS found in LIMCs.³⁶ Innovative health care services and legislative reforms are thus required to develop a well-structured and integrated health system.

Opportunities Pharmacists at this time of crisis can play multiple roles in healthcare management. With EHS, they can cover from pre-disaster to post-disaster scenarios with their managerial and clinical skills. Pharmacists can be vital in awareness and screening programs and ensure safe and uninterrupted SCM of drugs and pharmaceuticals, triaging, wound managing, immunization, and counseling programs as well. They can be helpful in mobilizing volunteers, preparing guideline, and drug therapy management services for people vulnerable to COVID-19 infection by different means. The issuance of pharmacy guidelines during such crisis would help manage the pharmaceutical supply effectively ensuring rational drug therapy. With the increased demand of some formulations required in crises such as; alcohol based hand sanitizer formulations, pharmacists can extemporaneously compound hand sanitizers and disinfectants as per World Health organization (WHO) guidance.³⁷ Thus, it is a great opportunity to show their importance in strengthening the health care system.

Threat While dealing with the COVID-19, pharmacists are often neglected as a healthcare professional. The lack of provision of health accessories such as PPE and incentives as well, is discouraging their effective role.³ Even then, pharmacists are contributing to mitigation, preparedness, prevention, and response to COVID-19 for delivery of health service to public. However, lack of resources and structural mismanagement in this area may threaten this profession. Thus, it is necessary to improve the investment of the governing body to health sector as per population growth. With a legal reforms, and with the contribution of authoritative, accountable, and skillful pharmacists; a remarkable change can happen.

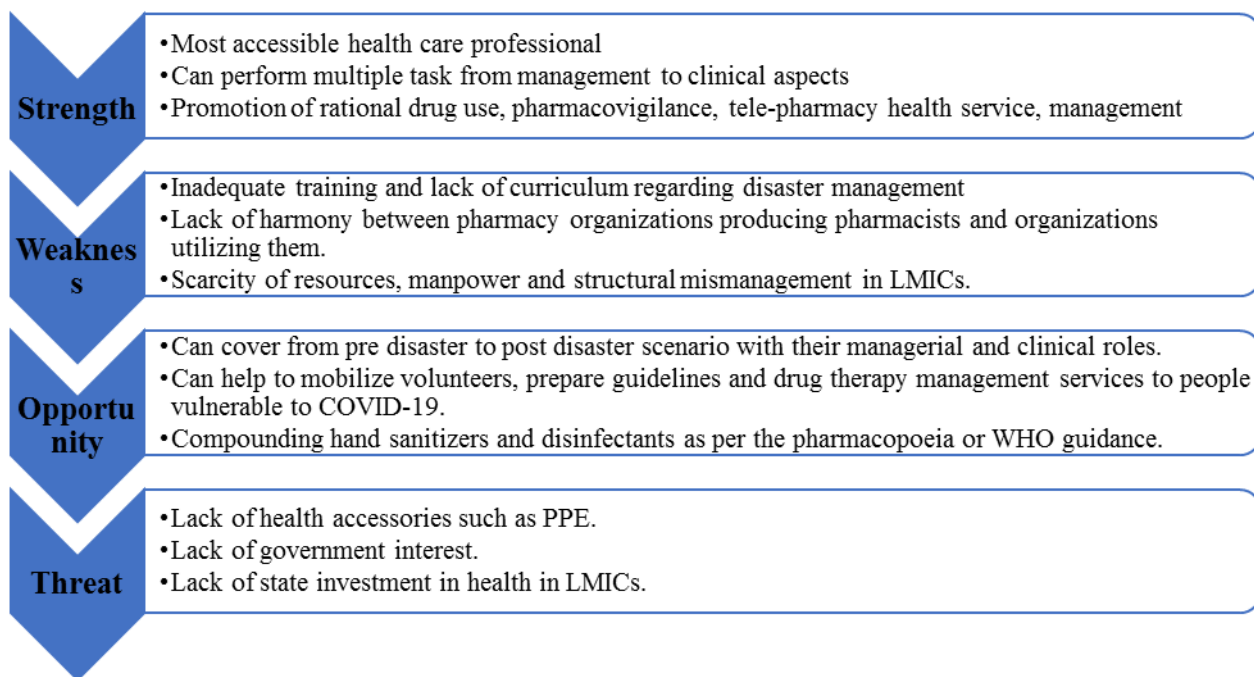


Figure 4: SWOT analysis for pharmacists in COVID-19 management

CONCLUSION

With the paradigm shift in practice, pharmacists have been involved in different settings for patient care. For the provision of EHS, pharmacists are considered well placed in all types of disaster management. In COVID-19 pandemic, pharmacists around the world are working as the front-liner for the management of a crisis. With their academic background and experimental training, pharmacists are performing multi-tasking roles from managerial to clinical aspects. Pharmaceutical care has played a significant role in better health care system improving quality of life and optimizing therapeutic outcome. Pharmacists are equally fit for pre-, during-, as well as in post-crisis scenarios for

the preparedness, mitigation, response, and recovery phases of services in healthcare. However, beating COVID-19 in many LMICs even as a front-liner; authorities seem to have shown tacit interest to this profession. Legal reforms are required to achieve the goals defined by the nation to improve the health care system. Thus, without a knowledgeable pharmacist, the objective of a structured and integrated health care system seems impossible to achieve. The inter- and intra-professional collaboration of pharmacists, other healthcare professionals, and administrative bodies will be the most important framework of the better healthcare system.

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