

## Performance of the pharmaceutical professional during the COVID-19 pandemic



<https://doi.org/10.56238/globalhealthprespec-030>

### Stefani Natali Stoll

Pharmacy Course, Center for Biological and Health Sciences, UNIVATES University Center, Lajeado, RS, Brazil.

E-mail: [stefani.stoll@universo.univates.br](mailto:stefani.stoll@universo.univates.br)

### Danieli Gerhardt

Pharmacy Course, Center for Biological and Health Sciences, UNIVATES University Center, Lajeado, RS, Brazil.

### ABSTRACT

The COVID-19 pandemic has impacted not only the population, but also health systems around the world. Hospitals and care networks have been caught up in one of the biggest public health challenges of recent times: a novel coronavirus. In this scenario, pharmaceutical professionals perform an essential function since they are easily accessible to the population through drugstores and pharmacies and are able to offer guidance in the fight against the disease. Thus, the objective of the

present study was to observe and report the services and performance of the pharmaceutical professional during the COVID-19 pandemic around the world. To this end, a bibliographic review was performed with a targeted search of scientific articles during the month of June 2020 in the PubMed and Scielo databases. The data were presented in the form of a comparative table containing the objectives of the articles, country of origin and dates of publication, as well as a description of the activities of the pharmaceutical professional cited in the different studies. Based on the results, it was observed the importance of the performance of the pharmaceutical professional in the hospital, community and clinical spheres, during the pandemic, both in the direct care of the patient and in the pharmacotherapeutic contribution in team. Therefore, the role of the pharmacist in the fight against COVID-19 is essential not only in dispensing the drug in pharmacies, but also in the primary care of the patient with reliable guidance and avoiding unnecessary trips to hospitals.

**Keywords:** Pharmaceutical services, Pharmaceutical care, COVID-19.

## 1 INTRODUCTION

The coronavirus pandemic has been responsible for one of the biggest global public health crises, affecting many countries around the globe. The World Health Organization (WHO) characterizes COVID-19 as a pandemic on March 11, 2020, with the first case detected in December 2019 in the city of Wuhan, China. According to the WHO, the coronavirus belongs to a large family of viruses that can cause illness in animals or humans through respiratory infections such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). Regarding the symptoms of COVID-19, the WHO highlights fever, dry cough and tiredness as the main ones, with about 80% of people recovering from the disease without needing hospital treatment and 1 in 5 people who contract the virus become seriously ill. Higher risk is attributed to older people or those with associated comorbidities such as high blood pressure, heart and lung problems, diabetes or cancer (WHO, 2020). The transmission of the coronavirus occurs mainly from human to human through respiratory droplets, having an incubation period of 1 to 14 days before the onset of symptoms and



therefore social distancing is important in order to prevent community transmission and try to maintain control of the pandemic (ZHENG S. et al., 2020).

The COVID-19 scenario brings unprecedented sanitary conditions and enormous pressure on health systems around the world. As a result, chronic patients are affected while they may have difficulty accessing health services for routine treatment and medication management. Therefore, pharmacies and drugstores are useful facilities to facilitate the access of these patients, as well as the contribution of pharmacists to help alleviate the burden on already overburdened health systems (KRETCHY I. et al, 2020). In this context, it is important to highlight the duties of pharmacists as one of the most accessible health professionals to the general public and who have much to offer in assisting and combating COVID-19. For example, with direct pharmaceutical assistance to patients with chronic diseases, guidance and rational use of medications, as well as forms of disease prevention (HEDIMA E. et al., 2020).

Clinical pharmacists are accustomed to performing pharmaceutical care in their work environment in order to ensure the safe and effective use of their patients' medications. However, in the context of the pandemic, as in other public health emergencies, work strategies need to be adapted according to the spread of the disease, where sometimes information and resources to guide professionals are lacking (LI H. et al., 2020). Based on the above, the present work aims to observe and report the main services and performance of the pharmaceutical professional during the COVID-19 pandemic, around the world.

## 2 MATERIALS AND METHOD

The present study is a literature review on pharmaceutical services related to the COVID-19 pandemic. The review consisted of the targeted search of scientific articles during the month of June 2020 based on the PubMed and Scielo databases, using the keywords: pharmaceutical services, pharmaceutical care, COVID-19. The results of the bibliographic survey were tabulated according to the objectives of the articles, country of origin and date of publication, comparing the performance of the pharmacist in the different studies.

## 3 RESULTS AND DISCUSSION

The database search resulted in 198 results in ScienceDirect and 59 results in PubMed. After excluding articles that did not contemplate the desired theme, 14 and 11 articles were obtained from each database, respectively. Among the 25 articles included, 8 were selected for analysis of the competencies of the pharmacists cited and direct comparison (Table 1). As expected, Chinese articles were the most incident, but not unique: research groups from countries in the United Kingdom, Pakistan, Africa, Iran, were also present. Among the areas of activity of the pharmacist observed,



community pharmacy (5 articles) stood out, followed by hospital pharmacy (2 articles) and clinical pharmacy (1 article). Regarding the activities performed by pharmacists, the most cited were: evaluating the safety, efficacy and rational use of medicines, informing about COVID-19, advising on medications, screening suspects of the disease and patient care in order to relieve the burden on the health system as well as integrating health teams collaborating in relation to pharmacotherapy.

Table 1 - Main articles resulting from the search in the PubMed and ScienceDirect databases

Article	Goal	Location, date	Cited activities
SONG Z. et al. Hospital pharmacists' pharmaceutical care for hospitalized patients with COVID-19: Recommendations and guidance from clinical experience. <i>Research in Social and Administrative Pharmacy</i> . 2020.	Discuss the role of hospital pharmacists in providing pharmaceutical care to hospitalized patients with COVID-19 and promote patient care and management during the pandemic.	Beijing, China 3, April/2020	<u>Hospital pharmacist-drug</u> adjustment- evaluate drug safety and efficacy -monitor drug interactions -offer emotional counseling -help collect data on the efficacy and safety of vaccines
LI H. et al. Fighting against COVID-19: Innovative strategies for clinical pharmacists. <i>Research in Social and Administrative Pharmacy</i> . 2020.	Investigate the prevention and control measures of clinical pharmacists during the outbreak of novel coronavirus, summarize the roles and responsibilities of clinical pharmacists.	Beijing, China 6, April/2020	<u>Clinical pharmacist-industry</u> leadership-inform about medicines- promote the rational use of medicines-work in collaborative teams-rationally analyze the situation-ensure the safety and rational use of medicines.
ZHENG S. et al. Recommendations and guidance for providing pharmaceutical care services during COVID-19 pandemic: A China perspective. <i>Research in Social and Administrative Pharmacy</i> . 2020.	Discuss the role of community pharmacists in pharmaceutical care during COVID19 and promote prevention, control, and safe use of medications in the community's patient population.	Beijing, China 26, March/2020	<u>Community</u> pharmacist-dispense medications to the patient-pay attention to self-protection and the patient-be readily available for consultations-guide equivalent therapeutic substitution -assist in the identification of suspicious patients -home care consultation - orientation of patients with chronic diseases-inform about delivery services
HEDIMA E. et al. Community Pharmacists: On the frontline of health service against COVID-19 in LMICs. <i>Research in Social and Administrative Pharmacy</i> . 2020.	Highlight additional functions and activities related to the public health response that can be performed by community pharmacists that can help reduce pressure on general practice and other areas of the health service.	Nigeria, Africa 17, April/2020	<u>Community-accessible pharmacist</u> for underserved populations -refer patients when needed-inform about COVID-19-promote rational use of medicines
YING W. et al. Drugs Supply and Pharmaceutical Care	Summarize drug supply management practices and pharmaceutical	Jilin from China 6, April/2020	<u>Hospital pharmacist</u> - monitor of adverse reactions-participate in multidisciplinary



Management Practices at a Designated Hospital During the COVID-19 Epidemic. <i>Research in Social and Administrative Pharmacy</i> . 2020.	services in coping with COVID-19		consultation-manage drug supply-manage use of off-label drugs-promote pharmaceutical care
BUKHARI N. et al. Pharmacists at the frontline beating the COVID-19 pandemi. <i>J Pharm Policy Pract.</i> 2020	Establish 10-step protection guidelines for pharmacy teams.	Pakistan and United Kingdom April 20, 2020	<u>Community pharmacist-perform</u> triage services-see patients to reduce the burden on hospitals and doctors' offices-provide home deliveries
KRETCZY I. et al. Medication management and adherence during the COVID-19 pandemic: Perspectives and experiences from low- and middle-income countries. <i>Research in Social and Administrative Pharmacy</i> . 2020.	Highlight the pharmaceutical care practices of community pharmacists to patients with chronic diseases during this pandemic.	Ghana, Africa 15, April/2020	<u>Community pharmacist-manage</u> chronic conditions-promote medication adherence-ease the burden on health systems -screen suspected patients -rational use of medications during the pandemic-review prescribed pharmacotherapy-inform about COVID-19
AMERI A. et al. Tele-Pharmacy: A New Opportunity for Consultation in COVID-19 Pandemic. <i>Health Policy and Technology</i> . 2020.	(Letter to the editor, outline) Dissertation on the importance of telepharmacy in the COVID-19 pandemic.	Iran June 14, 2020	<u>Community pharmacist-perform</u> consultation by telepharmacy-reduces adverse effects and interactions to drugs-promote drug efficacy and cost reduction.-review the patient's profile and perform medication adequacy.

A study by Song et al. (2020), brings some functions of the pharmacist in the hospital environment during the pandemic: to participate in evidence-based decision-making about medications, assisting physicians in the formulation and adjustment of drugs in patients with COVID-19, as well as monitoring and evaluating the safety and efficacy of these drugs. According to the authors, the clinical pharmacist should also monitor drug interactions, offer emotional counseling and psychological support to patients with the disease. In addition, when it comes to participants in vaccine-related clinical trials for COVID-19, hospital pharmacists should help clinicians monitor adverse manifestations and reactions after vaccination, assist in collecting data on the efficacy and safety of vaccines during pharmaceutical care. In addition, the International Federation of Pharmacy (IFP) guidelines emphasize that as a member of healthcare professionals, the hospital pharmacist has a responsibility to join the medical collaboration team and provide pharmaceutical care services to COVID-19 patients in order to improve the level of drug therapy and promote overall control of the pandemic (SONG et al., 2020).

Already Zheng et al. (2020), brings the activities of the pharmacist in community pharmacy: performing the dispensing of medicines to the patient during the COVID-19 pandemic paying attention



to self-protection (use of PPE), as well as patient protection (checking if he is wearing a mask and performing hygiene properly). According to the authors, pharmacists should be readily available to provide consultations on self-protection, guide an equivalent therapeutic substitution at the time of dispensing, in case the pharmacy is lacking the prescribed drug, in order to avoid additional trips to other pharmacies. Another activity of the pharmacist in drugstores during the pandemic is to assist in the identification of patients suspected of coronavirus based on clinical symptoms (cough and fatigue and history of travel to places with cases of the disease in the last fourteen days). If this patient is identified, the pharmacist should encourage him to seek immediate medical treatment, and may offer reconciliation of medications, home care consultation for these patients in order to support their recovery at home. Another very important function of pharmacists is the active guidance of patients with chronic diseases in order to improve the adherence to medications of these patients by encouraging self-monitoring: to realize the effectiveness and safety of therapy, to instruct patients to take their medications in the usual dosage, to monitor blood glucose, blood pressure, when applicable, emphasizing the importance of disease control to avoid unnecessary hospital visits during the pandemic. Finally, authors bring the importance of the pharmacist informing patients about the availability of drug delivery services at home, preventing them from leaving home.

Study by Li et al. (2020), brings from the activities of Chinese clinical pharmacists who created a Manual of Rational Use of Medicines to help frontline physicians understand and apply in the treatment of patients with COVID-19, including use and dosage, solvents, precautions, adverse reactions, drug interactions, dose adjustment for special populations (pregnant women, children, elderly, dialysis patients). In addition, clinical pharmacists participated in evidence-based evaluations of the efficacy of drugs for SARS and MERS respiratory syndromes with the aim of finding references for the treatment of COVID-19, evaluating the indications and efficacy of antiviral drugs such as lopinavir, ritonavir, interferon, chloroquine in the prevention and treatment of COVID-19, deciding which drugs can be nebulized, optimal dosage, route of administration. In addition, Hedima et al. (2020) cites that in the face of the pandemic, domestic and foreign clinical pharmacists have collaborated through their expertise in pharmacology and therapeutics to actively participate in COVID-19 medical activities. In many rural or underserved communities, pharmacists are the most accessible and patient-first contact health professionals when there is often a shortage of doctors. According to the authors, both hospital pharmacists and clinicians or those in community settings (such as pharmacies and drugstores) are qualified and trained to treat infectious diseases and can guide with reliable information and advice during the pandemic. Due to the creation of a bond between pharmacists and customers (very common in community pharmacies or drugstores), the movement of individuals to obtain information is reduced and consequently a possible spread of the virus.



Pharmacists also often have a good relationship with doctors and hospitals to properly refer patients when needed (HEDIMA et al., 2020).

Another important possibility of action of the pharmacist during the pandemic is telepharmacy, according to Ameri et al. (2020). According to the authors, with the COVID-19 pandemic, the use of information technology in health services, such as telemedicine, has been revolutionized. In fact, this feature provides virtual consultations, preventing direct contact with the patient and, consequently, a possible transmission of the virus. Telepharmacy is part of telemedicine and refers to the provision of pharmaceutical services within the scope of their responsibilities by maintaining spatial distance with patients or other health professionals. Thus, the pharmacist can communicate with patients for medication consultation, for example, through real-time videoconferencing technology (KANE-GILL et al. 2019). This tool can help reduce adverse effects or undesirable drug interactions as well as promote therapy effectiveness and even cost reduction (AMERI et al., 2020). In addition, telepharmacy is also a strategy to increase access for underserved populations with COVID-19 in rural areas. The pharmacist can give consultations on diet instructions, self-protection, disease monitoring, medications after discharge, and other guidance for recovered patients (LI et al., 2020). According to Ameri et al. (2020), although telepharmacy does not solve all problems, it is a modern and adequate approach to strengthen the relationship between pharmacists and health professionals or to consult with patients with COVID.19.

#### 4 CONCLUSIONS

In fact, the different activities and attributions of the pharmacist were visibly praised during the pandemic, gaining greater visibility both within the health teams in patient care and in society as a whole. Pharmacists from the various areas of activity (hospitals, pharmacies and clinics) play an exclusive role when it comes to pharmacotherapy, in order to ensure the effectiveness and safety of the treatment. New resources such as telepharmacy, successfully employed during the pandemic, may continue to be valuable tools for pharmacists to access more underserved populations. Pharmaceutical services proved to be indispensable in the treatment of patients hospitalized for COVID-19, in addition to the valuable guidance of these professionals assisting in the primary care of the population and collaborating with the Health Networks.



## REFERENCES

- AMERIA. et al. Tele-Pharmacy: A New Opportunity for Consultation in COVID-19 Pandemic. *Health Policy and Technology*. 2020.
- BUKHARI N. et al. Pharmacists at the frontline beating the COVID-19 pandemi. *J Pharm Policy Pract*. 2020.
- HEDIMA E. et al. Community Pharmacists: On the frontline of health service against COVID-19 in LMICs. *Research in Social and Administrative Pharmacy*. 2020.
- KANE-GILL S.L et al. Expansion of Telemedicine Services: Telepharmacy, Telestroke, Teledialysis, Tele–Emergency Medicine, *Crit Care Clin*, v.35, p. 519-533, 2019.
- KRETCHY I. et al. Medication management and adherence during the COVID-19 pandemic: Perspectives and experiences from low-and middle-income countries. *Research in Social and Administrative Pharmacy*. 2020.
- LI H. et al. Fighting against COVID-19: Innovative strategies for clinical pharmacists. *Research in Social and Administrative Pharmacy*. 2020.
- SONG Z. et al. Hospital pharmacists' pharmaceutical care for hospitalized patients with COVID-19: Recommendations and guidance from clinical experience. *Research in Social and Administrative Pharmacy*. 2020.
- YING W. et al. Drugs Supply and Pharmaceutical Care Management Practices at a Designated Hospital During the COVID-19 Epidemic. *Research in Social and Administrative Pharmacy*. 2020.
- ZHENG S. et al. Recommendations and guidance for providing pharmaceutical care services during COVID-19 pandemic: A China perspective. *Research in Social and Administrative Pharmacy*. 2020.