

## Original Research

# Evaluating the effect of COVID-19 on community pharmacist's practice

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**Mediterranean Journal of  
Pharmacy and Pharmaceutical  
Sciences**

### Article information

**Received**  
03-06-2021

**Revised**  
25-06-2021

**Accepted**  
28-06-2021

**Published**  
30-06--2021

DOI: xxxxxxxxxxxxxxxxx

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### Abstract

Pharmacists stand alongside with other professionals in representing essential healthcare during health emergencies such as COVID-19 pandemic. The present study seeks to explore the behavior and attitude of community pharmacists across various pharmacies throughout this pandemic towards the safety of workplace environment for staff and patients. An online questionnaire has been prepared and distributed to 145 community pharmacies during March to May, 2020. The collected results and data showed that community pharmacists in Libya have a good knowledge and adherence to preventive and protective measures published by FIP, WHO and other health-related organizations to protect themselves and society from infection. The pharmacist role in educating and information provision of the current disease and its management is still going on regardless the pandemic. A negative evaluation to the government support during the pandemic is clear from participant's replies. In Conclusion, this study looks forward to disclosing the current activities undertaken across various community pharmacy settings concerning safety of the workplace environment for both staff and patients. A clear and relatively realistic picture of the extent of commitment and knowledge of pharmacists of the necessary aspects needed to deal with this pandemic within community pharmacies is suggested. The extent of community pharmacist's knowledge, readiness and speed of their response to such a pandemic have been identified.

**Keywords:** COVID-19, community pharmacist, pharmacy practice, Libya

**HOW TO CITE THIS ARTICLE:** Muhammed Mansour, Safa Alsaadawi, Ayat Benjaber, Nada Ben Issa, Mohamed Abdulsamad (2021) Evaluating the effect of COVID-19 on community pharmacist's practice. *Mediterr J Pharm Pharm Sci* 1(2): 51-57. <https://www.medjpps.com>

### Introduction

Although the world has faced several different pandemics, however, the current and most dangers being the COVID-19 [1]. Among the healthcare workers greatly affected by the virus are pharmacists who represent a significant percentage of the healthcare workforce. Pharmacists stand alongside physicians and nurses in representing essential healthcare during health emergencies as COVID-19 pandemic. It is of importance to say that the healthcare professionals can properly deal with health emergencies, as they respond to this situation in which it can affect many people [2]. Pharmacists play an essential role in the healthcare community, as they are active members of the healthcare team who are responsible for overseeing the optimal, safe and cost-effective medication therapy management to improve the patient care [3]. Medical services are under a lot of stress as a result of the COVID-

19 pandemic and there is a requirement for a well-coordinated pharmacy support infrastructure and event-driven pharmaceutical care activities [4]. Pharmacists' responsibilities in case of COVID-19 include raising public awareness about the virus as well as manufacturing, distributing, supplying essential preventive items and personal protective equipment. In addition to participating in research activities aiming to develop vaccines and drugs to combat the virus [4, 5].

As soon as the World Health Organization (WHO) declared the disease as pandemic, the International Pharmaceutical Federation (FIP), the global body representing over four million pharmacists and pharmaceutical scientists, was quickly acted by forming a taskforce included experts from many areas of pharmaceutical sciences to help provide proper guidelines for pharmacists regarding the ways of dealing with the pandemic. The FIP quick actions helped to minimize the

impact of the pandemic on the pharmacy workforce. Since the beginning of the outbreak, the FIP has played an important role among the healthcare community by supporting pharmacists around the world with their expertise in dealing with health emergencies. FIP also conducts surveys and publishes certain documents about the virus to help pharmacists become more knowledgeable about the pandemic. Community pharmacists and hospitals are in charge of managing the adequate stock of personal protective equipment for healthcare professionals and patients [6]. In addition to guidance and support, FIP advocated governments and international organizations around the world for the proper recognition of pharmacists, pharmaceutical scientists and pharmaceutical educators' role in ongoing fight against the pandemic. The agency issued a call to action by creating document with 23 necessary actions that government figures must put into place to assure the continuity of the pharmaceutical profession around the world. Some of the measures cited in the document include the recognition of pharmacists as essential healthcare workers, ensuring that developing countries have the necessary resources needed to strengthen their health and education systems, and providing services to support the psychological welfare of pharmacists and pharmacy staff [2]. Thus, this study is aimed to assess the extent to which community pharmacists follow and know the adequate information and preventive measures necessary to limit the spread of the virus. Also, investigating the status of pharmacist's knowledge about the safety guidelines related to the pandemic and examine the extent of cooperation of Libyan governmental institutions and authorities with the current pandemic situation.

### Materials and methods

This study was carried out through a developing questionnaire based on FIP guidelines for pharmacists and pharmacy workforce using Google forms to evaluate the community pharmacists about their knowledge and level of adherence to the protective measures against coronavirus [7]. To improve the accuracy and objectivity of the study, the questionnaire has undergone many revisions and modifications by local researchers. Then, it was presented to two experts to obtain requirements of face validity [8]. The finalized questionnaire composed of 20 questions, with the majority being Yes or No options, while the rest was on a Likert scale for statistical analysis purposes.

The questionnaire was sent to 145 community pharmacies in March, April and May, 2020. Data were collected by Excel Microsoft 2016 and analyzed by the Statistical Package for the Social Sciences (SPSS, version 25).

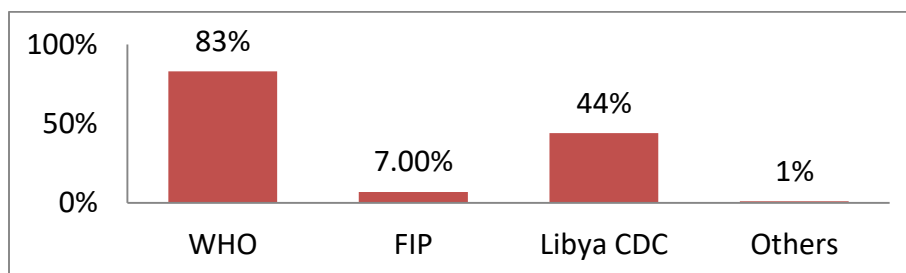
### Results

Among the 145 community pharmacies, the response was received from only 123 pharmacies with a response rate of 84.8%. Demographic data of pharmacists participated in the present study is presented in **Table 1**.

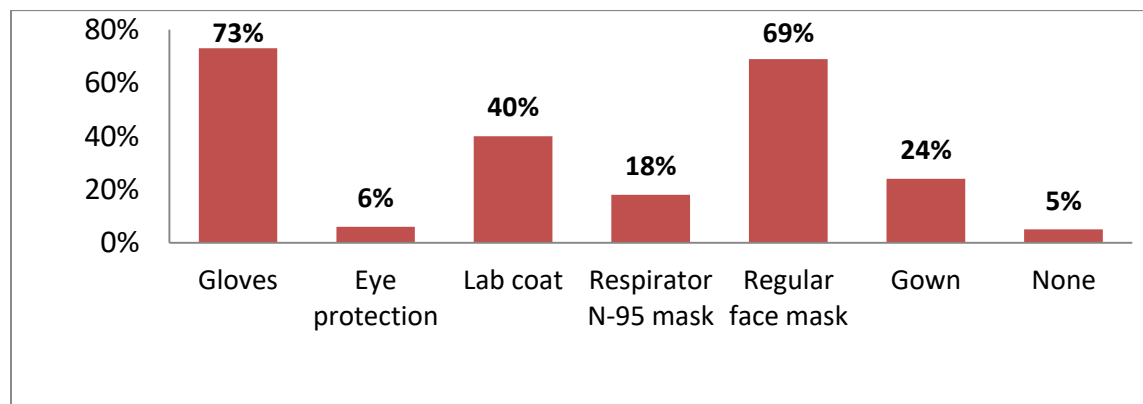
**Table 1:** Demographic data of Libyan Pharmacists participated

Variable	%
<b>Gender</b>	
Male	43
Female	57
<b>Years of Experience</b>	
> 2 years	30
2-5 years	30
5-10 years	26
10-15 years	9
< 15 years	5
<b>Graduation</b>	
University of Tripoli	60
University of Benghazi	8
University of Zawia	4
Misurata University	2
Omar Al-Mukhtar University, Al-Bayda	5
Tobruk University	9
Al-Mergib University	5
Others	7

Results reveal that 43% were males and 57% were females. The distribution of years of experience was mostly ranged between less than 2 to 10 years of experience, as it was found that about 30% of participants have less than two years, 30% have two to five years and 26% from five to ten years. Only 5% of the responders have more than 15 years of experience. Most of the contributors were pharmacy graduates from the University of Tripoli (60%) while the rest (40%) were graduated from more than seven universities. The first three questions were of checkboxes type which let survey takers select multiple answers from a list of choices. They were able to choose more than one answer option in the same question. The source of information question reveals that 83% of the answers choose WHO as a main source of information regarding the pandemic, followed by the National Center for Disease Control (NCDC) with 44% and only 7% got their information from the FIP (**Figure 1**). The answer of the other two questions, namely "What PPEs are you wearing during the pandemic for protection?" and "Which method of safety restrictions did you use in your pharmacy?" are presented in **Figures 2 and 3**.



**Figure 1:** Source of information to pharmacists about COVID-19

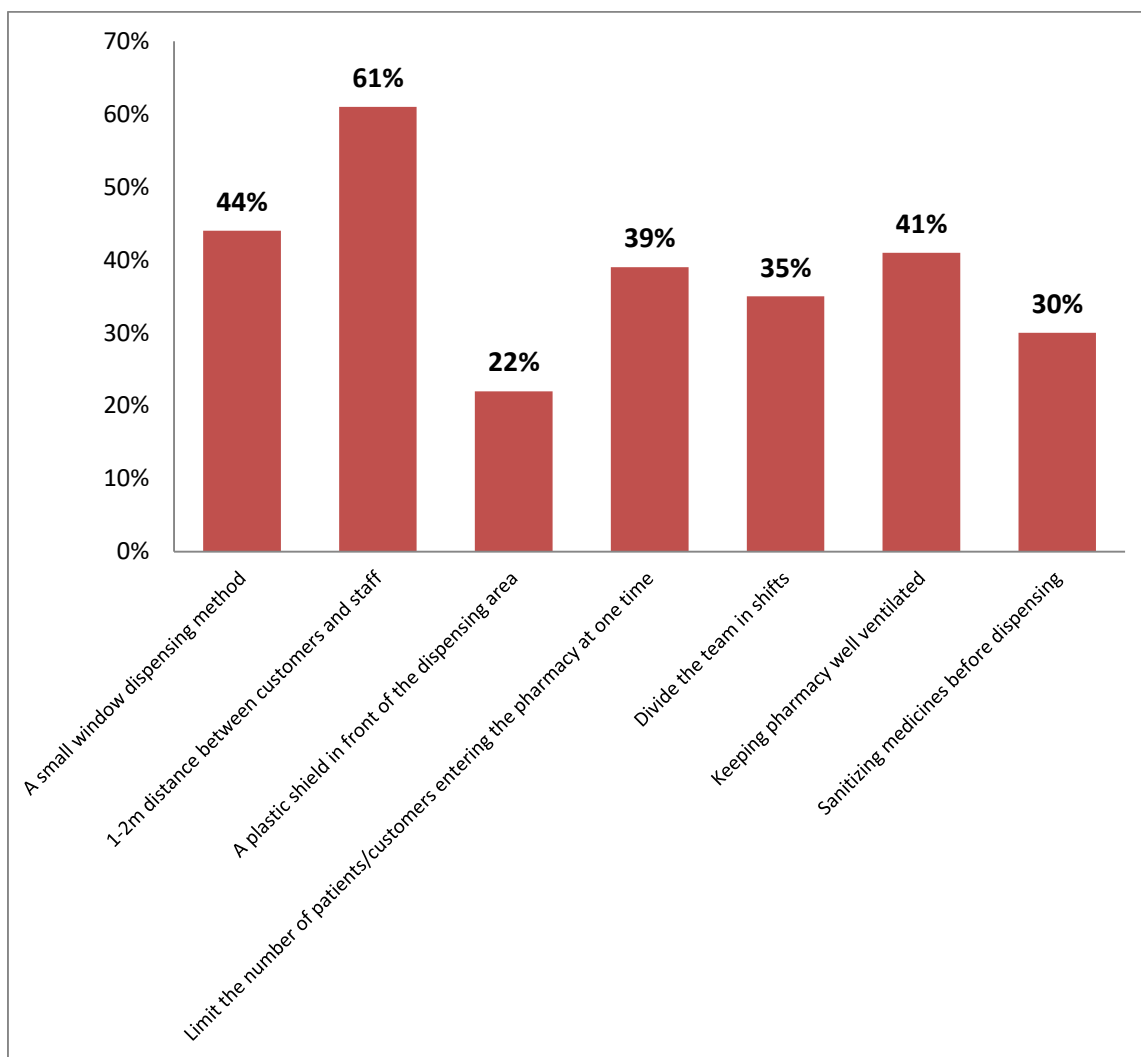


**Figure 2:** Types of PPEs that pharmacists were wearing during the pandemic

**Figure 2** reveals that 70% of pharmacists wore gloves and 69% wore facemasks routinely. 40% were wearing a lab coat and about 5% were not wearing any protective equipment. **Figure 3** shows different safety restrictions used by pharmacists with about 60% of keeping distance between pharmacist and customers. Only 30% sanitizing medicines before dispensing.

**Table 2** represents the answers to YES or NO options from Q1 to Q13 and **Table 3** summarizes the answers to Likert scale questions from Q14 to Q20. When it comes to Q.5 it can be seen that approximately half (49.59%) of the participants answered (Yes) to display a sign in or outside the pharmacy with the new opening hours to be readily seen by the public. While the other half 50.4% answered No, therefore, the results seems to be equivalent. In response to Q.6, 46.34% of the participants involved in the home delivery medicine help quarantined/isolated people to get their medicines. About 70% of the responses to Q7 demonstrates that the majority of the participants have declined the extra services such as measuring BP, injecting needles, skincare treatments, and other services temporarily during the pandemic. For Q8, 52% of the community pharmacists prioritized dispensing the medicines and medical devices over unnecessary product, for various reasons, part of which related to people at the beginning of the COVID-19

pandemic and their restlessness about the virus spread and prevalence of the disease. The other reason related to pharmacists and their way of organizing their priority in purchasing the medicines. When asked if community pharmacists should be responsible for referring potential COVID-19 cases, 87.8% of survey respondents corresponded with the statement, agreeing that pharmacists should be responsible for directing potential cases to the appropriate healthcare facilities. 12.9% of the survey participants disagreed with the statement, claiming that pharmacists are not responsible for referring cases. About 85% of the responses shows that pharmacists are aware of the presence of a nearby referral center to refer any suspected cases. Over half of the pharmacists (63%) questioned felt prepared to face the pandemic and play their part as a member of the healthcare community and the remaining 37% professed a lack of confidence in their readiness for the pandemic. Of the 123 pharmacists surveyed, 63% experienced a shortage of medicine in their workplace, while the remaining 37% stated that the amount of medicine their workplace offered was sufficient. A vast majority of survey respondents (83%) expressed confidence in their training abilities if ever faced with this type of pandemic in the future while a small minority (17%) believe that they still are not adequately trained enough to deal with another pandemic.



**Figure 3:** Safety restriction used by pharmacists during the pandemic

From the answers gathered in Q.13, it has been shown that the mean average of answers is around three, noticing that the COVID-19 pandemic has mildly affected the profit rate of the pharmacy. According to the survey results obtained from Q.15, a number of 45 participants were asked "To what extent has COVID-19 impacted the prices of medications?" an average mean of 3.28 answered moderately affecting. As appeared in Q16 the average mean of participants who answered with mildly affecting was 2.95, while 49 respondents endorsed that the COVID-19 pandemic mildly affects the availability of medications during this period. Owing to the answers of pharmacists to Q17, it is clearly showing that the average answers were around four claiming that the largest number of the participants of 48 said (often) for following the guidelines of protection during the pandemic. In Q.18, an average of 3.48 of 70 participants answered that the assessment of their colleagues' knowledge of the safety guidelines was good. In Q19, regarding the community pharmacists

vision on the governmental support throughout the COVID19 crisis, it is clearly shown that a mean of 1.99 around below the standards option has been obtained giving the chance to understand that a large number of them were having the same opinion. Ending with Q.20, the average agreement for 123 participants was 2.86 somewhat illustrated that 35 participants were disagreeing about 24-hour quarantine as a way to limit the number of cases of COVID-19. As all of the present data cannot be assumed to be normally distributed, the one-sample Wilcoxon signed-rank test was performed as a non-parametric alternative to the one-sample t-test. For Q.14, Q.16 and Q.20, the  $H_0$  cannot be rejected as the P-value is not less than the level of significance ( $P > 0.05$ ), therefore, it was considered as not significant. It has been concluded that both means are equal. For instance, the population mean equals the mean response according to the Likert scale. For Q15, Q.17, Q.18 and Q.19, the  $H_0$  was rejected as the P-value is less than the level of significance

( $P > 0.05$ ), so, it is statistically significant and concluded the population mean tested, is not equal to the mean that both means are significantly different. For instance, response according to the Likert scale.

**Table 2:** Response of pharmacists to Yes and No questions

Q. No	Question	Yes (%)	No (%)
4	Have you been educated on how to use/wear the protection tools for this type of pandemic during your time in college?	69 (56.1)	54 (53.9)
5	Did you display a sign in or outside of the pharmacy with the new opening hours to be readily seen by the public?	61 (49.6)	62 (50.4)
6	Did you participate in "tele-pharmacy services & home delivery medicines" during quarantine as a way to help quarantined/isolated people to get their medicines?	57 (46.3)	66 (53.7)
7	Services such as (measuring BP, injecting needles, skincare treatments, and other services) needs to be restricted or interrupted if they could show a risk to the health of the pharmacists especially for patients with symptoms of respiratory infection. Do you agree with that?	88 (71.5)	35 (28.5)
8	During the pandemic, have you prioritized the dispensing of medicines and medical devices over unnecessary products?	65 (52.8)	58 (47.2)
9	Do you think that community Pharmacists should be responsible for referring suspected cases to the relevant healthcare facility and authorities?	108 (87.8)	15 (12.2)
10	Do you know where is the nearest referral center for referring the suspected cases is?	105 (85.5)	19 (15.5)
11	As a pharmacist, are you prepared to face this type of pandemic technically/scientifically and be helpful as a member of the healthcare workforce?	78 (63.4)	45 (36.6)
12	Are you experiencing any shortages of medicines?	78 (63.4)	45 (36.6)
13	After COVID-19, do you think you are trained enough to handle/deal with this type of pandemic ever again in the future?	103 (83.8)	21 (17.2)

**Table 3:** Response of pharmacists to Likert scale questions

Q. No	Question	Severe n (%)	Moderate n (%)	Very mild n (%)	Mild n (%)	None n (%)	Mean	P-value
14	How does the Corona pandemic affect the pharmacy profit rate?	12 (10)	47 (38)	6 (5)	48 (39)	10 (8)	3.02	0.809
15	To what extent has the Coronavirus impacted the prices of medications?	24 (19.5)	45 (36.5)	8 (6.5)	34 (27.6)	12 (9.7)	3.28	0.019
16	To which point has the corona crisis-affected medicines available?	10 (8.1)	44 (35.7)	10 (8.1)	49 (39.8)	10 (8.1)	2.95	0.717
Q. No	Question	V. often n (%)	Often	sometimes n (%)	Rarely n (%)	Never n (%)	Mean	P-value
17	How often have you followed the guidelines of protection during the pandemic (e.g. sanitizing the counter, practicing social distance with customers, offering advice to the public)?	42 (34.1)	48 (39.0)	27 (21.9)	5 (4.8)	1 (0.8)	4.0	0.000
Q. No	Question	Excellent n (%)	Good n (%)	Moderate n (%)	Poor n (%)	V. Poor n (%)	Mean	P-value
18	As part of the pharmacy staff, what is your assessment of your colleagues' knowledge about the safety guidelines?	15 (12.1)	70 (56.9)	4 (3.25)	28 (22.76)	6 (4.8)	3.48	0.000
Q. No	Question	Far above Standard n (%)	Above standard n (%)	Meets standard n (%)	Below standard n (%)	Far below standard n (%)	Mean	P-value
19	What is your evaluation of the governments' support throughout this pandemic?	6 (4.8)	5 (1.0)	17 (13.8)	49 (39.8)	46 (37.3)	1.99	0.000
Q. No	Question	Strongly agree n (%)	Agree n (%)	Neither agree nor disagree n (%)	Disagree n (%)	Strongly disagree n (%)	Mean	P-value
20	Do you agree with the 24-hour quarantine as a way to limit the number of COVID-19 cases?	18 (14.6)	31 (25.0)	16 (13.0)	35 (28.4)	23 (19.5)	2.86	0.359

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## Discussion

Pharmacists have long been the most accessible health care providers and this is especially true in COVID-19 era. Despite stronger lockout limitations, community pharmacies remained accessible to the public while other professionals closed their doors somehow to patients. Community pharmacists as highly trusted healthcare clinicians play a critical role in addressing the gaps that are exacerbated by the increased demand on the system and decreased access to healthcare providers. Community pharmacies in low- and middle-income countries offer individuals who cannot afford physician fees the benefit of free medical advice [9]. All of the previously mentioned services require that pharmacist has to follow a high standard of conduct during a rare situation such as the COVID-19 era. The goal of this study was to assess community pharmacists' behavior and attitudes about COVID-19, as well as the influence of the pandemic in changing pharmacists' practice. According to the present results, WHO is the main source of information regarding the pandemic, followed by NCDC. Only 7% got their information from the FIP and 5% from other sources. In a similar study conducted in Iran, the main sources of COVID-19-related information among healthcare workers were found to be government websites, news media and social media [10]. However, it is recommended to acquire knowledge and information from reliable sources to avoid unconfirmed and misleading information. Findings regarding PPEs wearing during the pandemic pointed out that many pharmacists have taken the matter seriously to protect themselves, their colleagues, their families and their community. Because it reduces the possibilities of transmission, community pharmacists should have a solid understanding, positive attitude and behaviors about fundamental precautionary measures (e.g., wearing protective gear, goggles, face mask and gloves). Furthermore, because the COVID-19 is currently pandemic, community pharmacists must strengthen their measures and follow the prescribed hygiene standards. Good knowledge and practice of community pharmacists in following preventative measures, not only raises patient awareness, but also sends a powerful message to society [11]. In another study in Netherlands, some respondents predicted that some of the steps adopted to reduce the risk of coronavirus exposure would be sustained after the COVID-19 outbreak. About half of the respondents requested that plastic screens at the pharmacy counter become common place, both for cleanliness reasons and to increase pharmacy workers' feelings of safety in the face of verbal abuse or violence [12]. Furthermore, many participants have used several methods to reduce direct contact with

the patient such as using a small window to dispense medicines, applying social distancing and specifying a certain number of patients to be inside the pharmacy at the same time. This is also in line with the recommendations of many international and local organizations such as FIP and American CDC [2, 13]. Nevertheless, it has been believed that such measures could affect the quality of pharmaceutical services provided and considered as barrier to good communication with patients but as a quick assessment of the benefit and harm. Thus, it is found that the benefit outweighs the harm in such an unusual situation. According to the present results, community Libyan pharmacists were not satisfied with the measures taken by the government to face the pandemic. Likewise, the adequacy of national preparedness and the competence of the healthcare system to combat COVID-19 received poor results. In Iran, nurses indicated a similar level of risk perception [14]. In contrast, according to a research done in China, the majority of respondents (97.1%) were confident and agreed that their government can defeat COVID [15]. Pharmacists' evaluation in this study regarding the impact of the pandemic on drug availability ranged mostly from mild to moderate. As well, between 2019 and 2020, the number of drug shortages in the United States climbed by 37%, while medicine shortages in Australia soared by 300% [16]. To compensate for counseling and other pharmacy services, nearly half of the pharmacists used patients home delivery medicines, phone and online communication in order to reach patients regarding the lockdown measures. Although these supplies may support communication, they are usually not suitable for vulnerable patients, e.g. elderly with limited digital skills or patient with limited health literacy, this may increase the risk of drug related problems [17, 18].

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## Conclusion

Community pharmacists were actively involved in the implementation of activities and measures aimed at preventing COVID-19 transmission. This provides further evidence of their crucial role in the health system's response to the management of the pandemic. This study reports adherence to key preventative measures and activities implemented by community pharmacists in Libya. The results show the considerable impact of the COVID-19 pandemic on logistic procedures and services regarding patient education and counselling. It is recommended that pharmacies should be encouraged to utilize tele pharmacy or remote service.

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## Conflict of Interest

The authors declare no conflict of interest.

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