Healthcare Optimization, Medication Management and Preparedness in Retail Pharmacy Industry during the Covid-19 Pandemic in India

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Abstract

BODY: Coronavirus (COVID-19) pandemic is a health crisis, which has almost impacted every industry, causing steep inroads into the global economy, and the pharmaceutical industry is no exception. Retail pharmacists are the most approachable and immediate healthcare aid to the general public. Pharmacists can implement guidance and best practices in response to the rapidly changing COVID-19 pandemic to ensure patient and staff safety and the approaches pharmacy teams across the country. Social distancing and lockdown measures taken by the Indian government have been greatly affected by the retail pharmacy industry, leading to disruption in the supply chain of medicines and other precautionary equipment. Medication management, necessary safety equipment, and preparedness for handling drug shortages are the focus points for the retail pharmacy industry in these times of the pandemic. As the retail pharmacy comes under essential services and is operating continuously during the lockdown period, there is a need to highlight and gauge the preparedness and preventive measures undertaken by pharmacists in India during this medical emergency.

AIM: This research aims to analyze the retail pharmacy administration in India towards essential medication, to check adherence to key preventative measures and activities performed in inpatient counseling for self-management and safe dispensing of medicines in COVID-19 & lockdown period and the barriers faced/concerns towards these measures.

METHODOLOGY: This study is based on methods of quantitative analysis from retail pharmacies in India. The survey questionnaire was drafted on Google forms and sent to various retail pharmacy outlets. The data pertains to various medications' storage and consumption pattern, concerns over day-to-day activities in the pharmacy, and preventive measures implemented by pharmacists towards COVID-19 preparedness.

RESULT: 167 pharmacists addressed the questionnaire across various regions of the country by different types of pharmacy: community pharmacy (66.5%), retail pharmacy section in a private (14.4%) and public hospital (11.4%), and clinical pharmacy (7.8%). The statements developed for the study are closely related, and a good Cronbach's alpha value of 0.881 was achieved. One-way ANOVA testing determined that out of 12 statements on the preparedness of pharmacy, nine statements showed a significant difference concerning the types of pharmacy implementing the preventive measures.

1. Introduction

A new worldwide pandemic called the coronavirus (COVID-19) has emerged, which was caused by a new CoV strain called SARS-CoV-2. Due to its high transmissibility and catastrophic clinical and economic consequences, the novel 2019 coronavirus outbreak, which first occurred in December 2019 in Wuhan, China, has rapidly gained global attention converting the epidemic into a pandemic (AbdelJalil2020) (Dzingirai2020). During these unprecedented times of the COVID-19 pandemic, several sectors in India have been impacted, such as e-commerce, healthcare, hospitality, automotive, education, entertainment, economy, agriculture & food processing, unorganized sector (MSMEs) in terms of socio-economic activities, logistics & supply chain management, production/manufacturing, etc. As economies worldwide are suffering from the impact of COVID-19, businesses are experiencing losses, workers are without jobs, and many face the challenge of a complete upheaval of lifestyle. However, pharmaceutical companies are taking center

stage in the COVID-19 fight. They see positive growth on the stock market and a new burst of innovation in the infectious disease landscape, as the race for treatment approval for a COVID-19 therapy takes off [1].

The healthcare sector is at the epicenter of this unprecedented global pandemic challenge. COVID-19 has challenged the healthcare sector and the associated health systems worldwide in a striking manner, giving the importance of a safe environment and a healthy lifestyle (Adunlin2020). The lockdown period has caused administration hassles to many individuals/workforces, particularly the retail pharma industry. Since the outbreak of COVID-19, pharmacists, like other health professionals, have been the vanguard in combating the disease, playing a significant role in minimizing and avoiding its spread in community transmission by acting as a connector between community and healthcare (Elbeddini2020). On the contrary, to many other public services and businesses, retail pharmacies are under essential services as per Indian government orders. They are continuing to stay open during the COVID-19 pandemic to ensure adequate storage and supply of appropriate stocks of pharmaceutical products and devices to deliver essential counseling, informing, and educating the public, promoting the safety and prevention standards to the general public [2].

India has witnessed a huge spike in the number of confirmed COVID-19 cases, which has now crossed the 10-lakh mark (July 2020). A fully tested safe-to-use vaccine and necessary medications to counter COVID-19 infection are yet to come into the market. With this in mind, the government has put on hold the operations and functioning of non-essential businesses, schools, and colleges, restricting movement by all transportation means. It has implemented the social distancing norms and lockdown regulations (Adunlin2020) (Khasawneh2020) (Basheti2020). Medical professionals are working continuously to develop a vaccine to curb this health crisis. The pharmacists play a vital role in providing proper prevention information and educating the masses about reducing the spread by following sanitization and social distancing (Arain2020). During the early days of the COVID-19 scare and the abrupt lockdown measures taken by the Indian government, it was not easy for the retail pharmacy industry to cope with the supply-chain distortions. There was a communication gap between the pharmacists and the distributors as transportation/logistics of drugs, and necessary safety equipment came

to a halt. Many pharmacy stores were running low on over-the-counter and common medicines, types of safety equipment like facemask and hand-sanitizers. Medication administration was a real point of concern for the retail pharmacy industry during the lockdown period [3].

Another problem that the pharmacists face during these periods of lockdown and crisis is patients/consumers stockpiling medications (Kretchy2020). The abrupt increase in medication demand, be it common medicines for cough, cold & fever or otherwise the safety equipment like sanitizers, thermal scanners, N-95 masks, created management hassles for the pharmacy stores in various regions [4]. One more reason for the imbalance in the supply chain and logistics of medicines was the varying availability of Active Pharmaceutical Ingredients (APIs). India is a key manufacturer of APIs, but because of the extended lockdown and factory closures, production was at a standstill, and major pharmaceutical companies saw a drop in medicine production [5].

This study is planned to know about the level at which the Indian retail pharmacy industry incorporates the preventive measures and activities and barriers towards activities in the pharmacy in light of COVID-19 scenario (Aruru2020). Apart from the fact that pharmacists are engaged in the provision of medication, COVID-19 prevention products, and medical equipment supplies, they are also involved in spreading relevant health information related to coronavirus (Hoti2020) [6].

2. Literature Review

The COVID-19 pandemic is associated with a high mortality rate, which has impacted people's lives across the world. In order to contain the outbreak, systematic adherence to healthcare guidelines and constant public awareness are important until a fixed solution surfaces in terms of a safely tested vaccine (Dzingirai2020). Being part of the healthcare system, pharmacists hold a critical position in the healthcare administration and optimization and actively respond to the changes implemented in the pharmacy practice in light of this COVID-19 outbreak (Watkins2017) [7]. The retail pharmacy sector was quick in responding to the coronavirus situation as well as the lockdown regulations [8]. The governing body of pharmacy, "International Pharmaceutical Federation (FIP)" was reactive enough to publish the necessary guide manual called "Coronavirus 2019-nCoV outbreak: Informa-

tion and interim guidelines for pharmacists and the pharmacy workforce" These guidelines are set concerning the rules and regulations of the associations of all the countries (Adunlin2020) [9].

2.1. Medication Management

Stock management of essential medicines and sanitizing products was one of the essential practices that every pharmacy store in the world was engaged in. Creating a balance between the supply and demand of these mandatory consumables was the need of the hour (Hayden2020) (Badreldin2020) [10]. In India, pharmacies with limited PPE stock and essential safety products (facemasks and sanitizers) were sold out within days of the first registered coronavirus case in the country (Meghana2020) [11]. The huge spike in demand could not be met by low capacity small retail pharmacies and were initially facing difficulties in managing the surge in consumption of protective equipment, particularly in difficult-to-reach zones (Meghana2020) [12]. In the initial days of the lockdown, which started on 25th March 2020, many pharmacies, especially the small pharmacy stores with limited space, faced panic buying of essential medicines as well as a shortage of safety products (Aruru2020), which made pharmacy optimization a challenge and difficulties in implementing social distance norms and other necessary precautionary steps (Aruru2020) [13].

2.2. Preparedness of pharmacy

Under these lockdown constraints, the pharmacists need to optimize efficiently implementing various healthcare regulations and policies in the wake of COVID-19 and response to the countrywide lockdown (Hayden2020). In addition to maintaining the reliability of drug delivery at the neighborhood pharmacy level, it is critically vital for patients to ensure commitment to their existing prescription regimens to avoid any chance of their current health status that may put increased pressure on the already stressed healthcare system (Cadogan2020) [14]. Retail pharmacy professionals have to be highly responsive. They need to structure, plan, and prepare themselves by implementing various preventive measures.

2.3. General awareness

While the primary priority of healthcare providers for the past few months was on reacting to

COVID-19, patients will still begin to experience other non-COVID-19 associated symptoms and disorders that need treatment (Cadogan2020) [15], which is where pharmacists will be playing a specific role of educating the public towards infection control, measures to prevent transmission and establishing medication adherence, especially for patients with chronic illnesses. The reliability of these patients that required monthly check-ups and prescribed refills of medications has increased on the pharmacists as an immediate source of consultation because of increased risks of getting infected by visiting health facilities/concerned physician (Kretchy2020) [16]. As such, there has not been a sudden increase in corona patients in rural areas, but awareness of the pandemic outbreak should be spread collaboratively by rural-based pharmacists (Sum2020). Pharmacists are considered to be the dependable and precise source of information with the latest trends and precautionary measures concerned with COVID-19 infection and remove the possibility of misinformation among the general public (Hedima2020) (Li2020).

3. Methodology

This study highlights the various practices implemented towards healthcare management in light of the prevailing COVID-19 scenario by the different retail pharmacists in India. An online Google form was created and floated to known networks filled by various retail pharmacists in different regions. The questionnaire consists of different sections covering the pattern of stocking essential medications and their consumption during the lockdown, pharmacy preparedness for the COVID-19 pandemic, and the barriers faced by pharmacists on daily activities in the pharmacy in the current scenario.

3.1. Statistical Analysis

The Statistical Analysis was done on IBM SPSS Statistics 25.

4. Results

4.1. Pharmacists detail

167 pharmacists responded to the questionnaires. The region-wide distribution of the respondents is: North (27.5%), South (32.9%), East (6.6%), West (29.9%), and Central (3.0%). Out of the four types of pharmacies, the questionnaire was responded majorly

by the community pharmacists (66.5%), followed by the private hospital with retail section (14.4 %), then clinical pharmacy (11.4%) and public hospital with retail section (7.8%). Additional details of pharmacist responses are given in Table 1. The reliability test was done to check the internal consistency of all the statements related to the medication management, preparedness, and safety measures implemented in the pharmacy and barriers faced by pharmacists. The Cronbach's alpha was 0.881, which shows good reliability, and the statements are closely related as shown in Table 2. Figure 1 shown in Location of as pharmacy region.
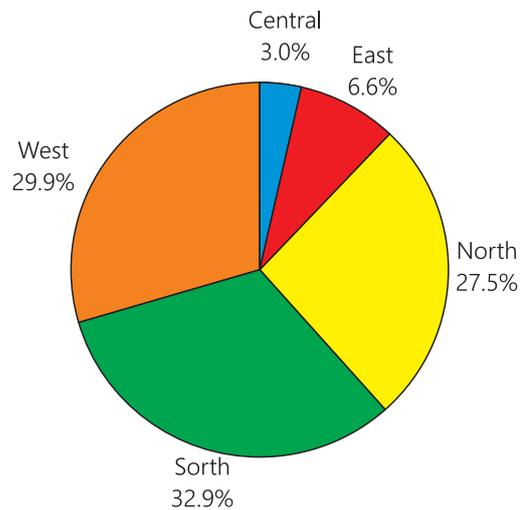
Table 1

Details of pharmacist responses

Details	Description	Frequency	Percentage %
Region	North	46	27.5
	South	55	32.9
	East	11	6.6
	West	50	29.9
	Central	5	3.0
Type of pharmacy	Community pharmacy	111	66.5
	Private hospital pharmacy with retail section	24	14.4
	Public hospital pharmacy with retail section	13	7.8
	Clinical pharmacy	19	11.4
Number of staff in the pharmacy	1	21	12.6
	2 to 3	102	61.1
	4	20	12.0
	>5	24	14.4
Type of medication provided	Ayurvedic	7	4.2
	Allopathic	156	93.4
	Homeopathic	4	2.4

Table 2

Reliability test

Case Processing Summary			
		N	%
Cases	Valid	167	100
	Excluded[a]	0	0
	Total	167	100
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha		N of Items	
0.881		25	

Figure 1. Location of as pharmacy region

4.2. Medication management

This section concerns the storage and consumption pattern of various medications by different pharmacists during the COVID-19 situation. According to pharmacists, month-wise consumption of medicines and safety equipment during the COVID-19 pandemic and lockdown period was more in April (46.7%), followed by May (24.6%), then March (21.0%) and least in June (7.8%) as shown in Figure 2. Most pharmacists (n=105, 62.9%) indicated that the supply of essential medicines during the pandemic was good, and there was sufficient medication storage. Many pharmacists saw an increase in prescription drugs such as anti-diabetes, anti-hypertensive, CNS drugs, anti-platelets, etc. During this COVID-19 pandemic period March-June Consumers were keeping a good stock of their regular consuming medicines. Nearly half of the pharmacy stores (n=88, 52.7%) observed an increase in the consumption of immunity booster drugs, such as vitamin C and zinc supplements and multi-vitamins. Pharmacists also indicated that customers were stocking a good amount of OTC (Over-the-Counter) products like fever medicines and cough suppressants. A fair number of pharmacists saw decent purchase levels of anti-malarial drugs, steroids, and antibiotics. The majority of the pharmacists noticed a good consumption pattern (n=100, 59.9%) of non-medical treatment devices like steamers, thermometers, pulse oximeters, etc., indicating that the public is getting awareness preventive actions in light of the coronavirus pandemic. Many pharmacists had good collaboration (n=98, 58.7%) with other pharmacies to procure medications and supplies as shown on Figure 3. The descriptive statistics give us the mean and standard deviation of the responses to the statements. The skewness is done for checking whether

the data is normally distributed or not, and the Z-score calculates this. The value for the z-score should be between (-1.96 to +1.96) for the data to follow a normal distribution as shown in Table 3. Most of the statements are approximately normally distributed.
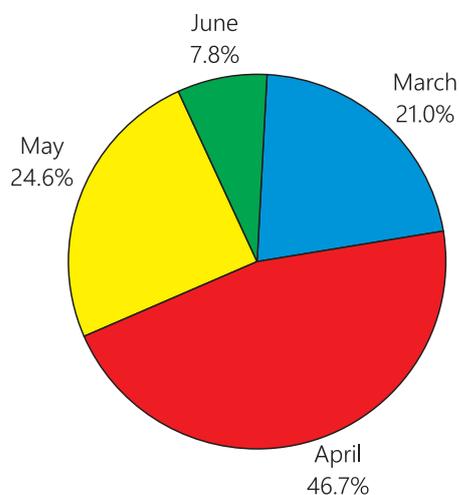

Figure 2. Month-wise consumption of medicines and safety equipments

4.3. Pharmacists COVID-19 preparedness

Many pharmacists in India have taken preventive steps and used safety equipment at their pharmacies. As per the responses received, most pharmacists strongly agreed on pharmacy-specific implementations of necessary preventive measures for the overall safety, such as floor markings for maintaining social distancing (n=77, 46.1%), contactless payments, and use of digital wallets (n=90, 53.9%), use of automatic dispensers for hand sanitization (combined n=126, 75.4%), dispensing of medical products by wearing gloves and barrier protection (n=97, 58.1% & n=71, 42.5% respectively), checking customers visiting a pharmacy for wearing facemasks (n=91, 54.4%). A moderate number of respondents also engaged in educating and counseling customers (n=67, 40.1%). Half of the respondents believe that the public was aware of the precautions and safety guidelines to be followed (n=84, 50.3). However, the pharmacists were involved in spreading awareness and safe-
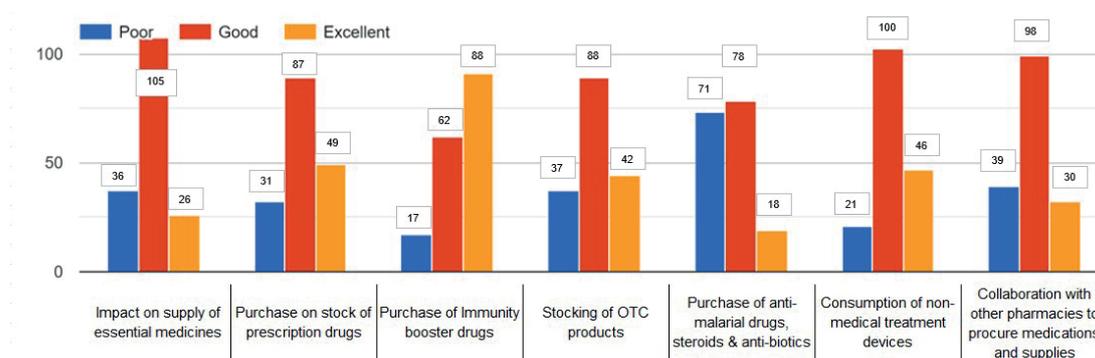

Figure 3. Storage and consumption pattern of various medications during COVID-19 situation

Table 3
Descriptive statistics of medication management by various pharmacists

Descriptive Statistics						
	N	Mean	Std. Deviation	Skewness		z-value
	Statistic	Statistic	Statistic	Statistic	Std. Error	
How was the impact on supply of essential medicines during COVID-19 period?	167	1.94	0.608	0.029	0.188	0.154
How was the purchase on stock of prescription drugs (Anti-diabetes, anti-hypertensive, CNS drugs, Anti platelets, etc.) during COVID-19 period (March-June)?	167	2.11	0.686	-0.141	0.188	-0.750
How was the purchase of Immunity booster drugs (Vitamin C supplement, Zinc supplement and multi-vitamins) during these times of the pandemic?	167	2.43	0.671	-0.751	0.188	-3.995
How OTC products like fever medicines and cough suppressants stocked by individuals during COVID-19?	167	2.03	0.689	-0.039	0.188	-0.207
How was the purchase of anti-malarial drugs, steroids &amp, anti-biotics during COVID-19?	167	1.68	0.659	0.448	0.188	2.383
How was the consumption of non-medical treatment devices like steamers, thermometers, pulse oximeter etc.?	167	2.15	0.617	-0.103	0.188	-0.547
How was the collaboration with other pharmacies to procure medications and supplies?	167	1.95	0.642	0.048	0.188	0.255
Valid N (listwise)	167					

ty measures by preparing signage/posters (n=68, 40.7%). On the other hand, pharmacists showed disagreement in performing thermal screening for the staff and incoming customers during pandemic and lockdown period (n=57, 34.1%); installment of Plexiglas barriers at the counters; home delivery of medication and other safety equipment. Table 4 shows the ANOVA.

One-way ANOVA test is illustrated in Table 3. We can interpret that out of the 12 statements, 9 statements are significant (p-value is less than 0.05), which means that the null hypothesis that there is no significant difference in the preparedness levels of the four types of pharmacies against the 12 statements has been rejected. It can be interpreted that different types of pharmacy stores have varied levels of preparedness and preventive

Table 4

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
1. My pharmacy has highly visible floor markings on the ground where patients/customers can stand in a queue.	Between Groups	13.568	3	4.523	6.200	.001
	Within Groups	118.911	163	.730		
	Total	132.479	166			
2. My pharmacy promotes contact-less payments like card payments and digital wallets (GPay, PhonePe, Paytm).	Between Groups	4.545	3	1.515	2.295	.080
	Within Groups	107.610	163	.660		
	Total	112.156	166			
3. My pharmacy promotes mandatory hand sanitization for patients/customers by placing automatic dispensers at the entrance.	Between Groups	5.027	3	1.676	2.029	.112
	Within Groups	134.626	163	.826		
	Total	139.653	166			
4. Thermal screening is done regularly (both customers & pharmacy staff).	Between Groups	11.502	3	3.834	3.715	.013
	Within Groups	168.246	163	1.032		
	Total	179.749	166			
5. My pharmacy staff engages with customers/patients by counseling and spreading prevention awareness.	Between Groups	14.285	3	4.762	6.880	.000
	Within Groups	112.817	163	.692		
	Total	127.102	166			
6. Adequate signage/posters have been prepared and placed at the pharmacy entrance for spreading awareness and safety measures towards COVID-19.	Between Groups	12.021	3	4.007	5.578	.001
	Within Groups	117.081	163	.718		
	Total	129.102	166			
7. My pharmacy has installed plexiglass barriers/windows/cage at the OTC counter.	Between Groups	10.741	3	3.580	2.812	.041
	Within Groups	207.570	163	1.273		
	Total	218.311	166			
8. My pharmacy provides safe home delivery of medication and other safety equipment.	Between Groups	3.744	3	1.248	.875	.455
	Within Groups	232.376	163	1.426		
	Total	236.120	166			
9. Awareness of customers/patients has increased during the pandemic period.	Between Groups	20.476	3	6.825	12.353	.000
	Within Groups	90.063	163	.553		
	Total	110.539	166			
10. Customers/patients visiting the pharmacy are checked for wearing facemasks/shields.	Between Groups	19.647	3	6.549	11.949	.000
	Within Groups	89.335	163	.548		
	Total	108.982	166			
11. Pharmacy staff wears gloves while dispensing medical products and changes them regularly.	Between Groups	12.478	3	4.159	7.049	.000
	Within Groups	96.181	163	.590		
	Total	108.659	166			
12. Pharmacy has barrier protection measures at dispensing windows.	Between Groups	10.698	3	3.566	5.196	.002
	Within Groups	111.853	163	.686		
	Total	122.551	166			

measures in light of the COVID-19 pandemic and lockdown period in India. A high value of (F) tells us that the independent variable impacts the dependent variable.

For statement 1, it can be interpreted that the type of pharmacy affects the implementation of the preventive measure of highly visible floor markings on the ground in the pharmacy for maintaining social distance. It can be seen that the clinical pharmacy has a significant difference in comparison with other types of pharmacy in implementing floor markings; therefore, the null hypothesis is rejected (p=0.001), which can be attributed to the fact that patients who visited the clinical health facilities for consultation and follow-ups, restricted their movements in this COVID-19 scenario. Due to this, there was limited activity in the clinical pharmacy store. Implementing such social distancing measures was not considered necessary. The post hoc analysis of statement (4) tells that the type of pharmacy affects the procedural thermal screening carried out for the incoming customers/patients in the pharmacy. There is a significant difference between the community pharmacy (N=111) and public pharmacy with retail store (N=13) in carrying out thermal screening process regularly due to which null hypothesis is getting rejected (p=0.013). Due to the lockdown restrictions, a larger portion of the public visits community pharmacy stores. Regular screening of the incoming public is mandatory. The post hoc analysis of statement (5) signifies that the type of pharmacy has a slight impact on the engagement of the pharmacy staff with the customers/patients for counseling and spreading prevention tips.

There is a significant difference between clinical pharmacy and other types of pharmacy; therefore, the null hypothesis is rejected (p=0.000). The number of patients visiting clinical health facilities for regular check-ups has decreased because of the rapid coronavirus spread. Apart from gaining knowledge and necessary precautions to be taken from news, social media, and online platforms, people engage more with the pharmacy stores in their neighborhood. For the post hoc analysis of statement (6), the type of pharmacy effects spreading awareness towards COVID-19 and preventive measures to be taken through posters/signage. It can be interpreted that there is a variation in the use of COVID-19 awareness posters by the clinical pharmacists as compared to the other three types; therefore, the null hypothesis is getting rejected (p=0.001). For statement (9), it can be interpreted that

there is a significant difference in the observation on the awareness level of the customers/patients during the pandemic between clinical pharmacists and other types of pharmacists. Hence, the null hypothesis is getting rejected (p=0.000). The post hoc analysis of statement (10) tells us that the type of pharmacy affects the dependent variable of checking the customers/patients for wearing facemasks by pharmacy staff. The null hypothesis is being rejected (p=0.000).

There is a significant difference in the observational checking between clinical pharmacists and other types of pharmacies. The clinical pharmacy staff is engaging less in checking incoming people for wearing facemasks than the other three pharmacies. For statement (11), clinical pharmacy has a significant difference compared with other types of pharmacy in dispensing medical products wearing gloves. The community pharmacists were highly involved in addressing the medical needs of the public during the pandemic and lockdown period, as they were the immediate healthcare access points in contrast to the clinical pharmacists, where people restricted themselves to visit; therefore, the null hypothesis is again getting rejected (p=0.000). For statement (12), clinical pharmacists showed a slight variation in implementing barrier protection measures. Therefore, a significant difference is created compared to the implementation measures taken by other types of pharmacies. Hence, the null hypothesis is getting rejected (p=0.002). These pharmacies are generally inbuilt inside the clinical health facility. They are small in size as compared with the community and other types of pharmacies. The statement (7) is significant (p=0.041). However, there is no major difference among the four types of pharmacies in installing plexiglass barrier protection on medicine dispensing counters. For statement (2) - promotion of contactless payments and use of digital wallets (p=0.080); statement (3) – promotion of mandatory hand sanitization by placing automatic dispensers (p=0.112) and statement (8) – home delivery of medication and necessary safety equipment in lockdown period (p=0.455), there is no significant difference concerning the type of pharmacy, as per the study and hence the null hypothesis is accepted.

4.4. Concerns faced towards the functioning of pharmacy

The pharmacists face challenges daily, and several problems hinder the functioning of retail pharma-

cy stores. According to the majority of respondents, self-safety and safety of the pharmacy staff are of high concern (n=62, 37.1%); stockpiling of medications by customers is also a point of concern for pharmacists (n=60, 35.9%). There was a moderate level of concern by medical shop personnel towards lack of protective equipment in their store as well in the market (n=51, 30.5%) and extended working hours due to the pandemic and lockdown periods (n=66, 39.5%). There was an indication by the pharmacists regarding low concern towards panic created among customers/patients because of the pandemic (n=75, 44.9%) and shortage of drugs (n=68, 40.7%) as shown in Figure 4.

5. Discussion

A large share of pharmacists had engaged them in the COVID-19 preparedness and had implemented the preventive measures in line with the safety regulations and operated and managed medication stocks in an optimizing manner during the lockdown period. This study helps us understand the pharmacist's crucial role in managing the healthcare system during health crises like COVID-19. From this study, we have analyzed (1) medication management and consumption pattern of essential medical goods, (2) preparedness level of pharmacists by implementing appropriate measures of safety, and (3) limitations in the functioning of pharmacy activities in these times of COVID-19 pandemic. Figure 4 shows the Barriers to functioning of pharmacy/

For the time, a proper safely tested vaccine comes out in the market, self-care is of vital importance. This pandemic period has showcased the importance of self-care and maintenance of health. Apart from following proper hygiene norms, such as frequently washing hands, mainly when commuting outside, wearing masks, using hand sanitizers when outside, and maintaining social distance, one should indulge in improv-

ing and maintaining one's immunity in this pandemic period. As per the study conducted, it can be seen that pharmacists observed an increase in the consumption of immunity booster medicines, such as Vitamin C supplement, Zinc supplement, and multi-vitamins. Similarly, there was an increase in non-medical treatment devices like steamers, thermometers, and pulse oximeters. Many chronic diseases suffering patients of hypertension, diabetics, heart disease, kidney disease, etc., who required regular check-ups and consultation avoid visiting the healthcare facility because of the coronavirus scare (Kretchy2020). These patients have stockpiled the required prescription medication for a set duration because purchasing on the stock of prescription drugs, such as anti-diabetes, anti-hypertensive, CNS drugs, anti-platelets, etc., the considered period from March to June. As per the study, the respondents also observed that customers/patients also created an unprecedented requirement for over-the-counter drugs, such as fever medicines and cough suppressants (Hoti2020). Being the immediate healthcare facility in the neighborhood and in the wake of less stock of certain medication, pharmacists also assist customers/patients in advocating parallel prescription drugs by considering the medicine composition (Bragazzi2020).

Many pharmacists were actively involved in implementing preventive measures, such as following social distancing guidelines, no direct contact with the incoming people, maintaining cleanliness, and regular disinfection of the pharmacy area (Hoti2020). Apart from this, pharmacists were highly involved in spreading awareness towards necessary preventive actions under the health guidelines, educating the public with appropriate usage of posters, using technology-based contact-fewer payments to avoid direct contact, and engaging in oral communication with customers/patients (Bahlol2020). In addition to following these
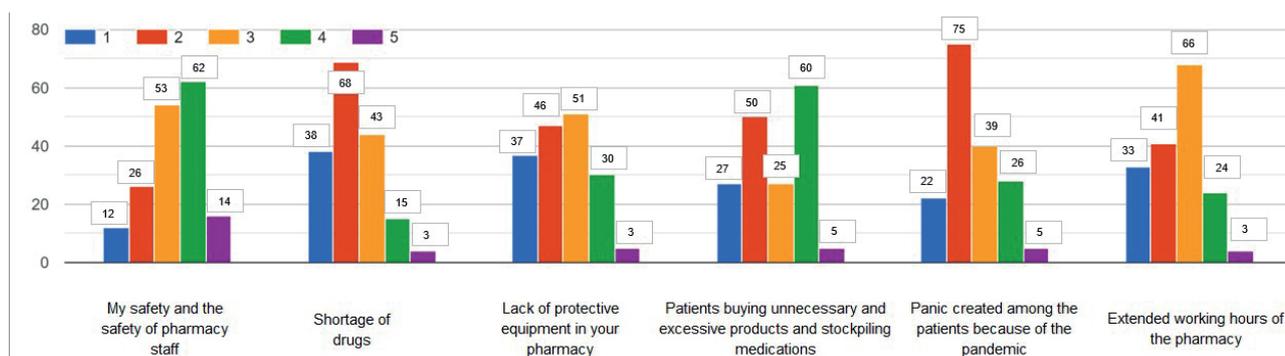

Figure 4. Barriers to functioning of pharmacy

activities, the pharmacists possess the knowledge in educating the public on the nature of coronavirus infection, its indications, and how it is transmitted (Hedima2020). From the study, after performing a one-way ANOVA test and Post Hoc test, we found that there was a significant difference in the implementation of most of these preparedness measures between clinical pharmacists and other types of pharmacies. Pharmacists are among the frontline healthcare workers working tirelessly through the pandemic to provide necessary medical assistance (Bukhari2020). The study also determined that many pharmacists faced several challenges in their daily functioning of the pharmacy store. Strenuous, prolonged working hours, managing the continuous stocking of protective equipment, and considering the safety of pharmacy staff and self, affect the mental health of the healthcare professionals (Erku2020).

6. Conclusion

The advent of COVID-19 has affected the functioning of all major sectors in India. The healthcare administration is actively involved in containing and holding back the community spread of the coronavirus. Being an important part of the healthcare system, the retail pharmacists firmly held their ground. They strongly participated in implementing prevention activities, spreading awareness and educating the public with accurate data, promoting adherence to medications, maintaining the stocks of essential medicines and protective equipment, and following the social distancing norms in the lockdown period. In times to come, when an effective, safely tested vaccine is out in the market, the retail pharmacists will be the key participants in dispensing the medication and in the immunization process. An online Google form was created and floated to known networks filled by various retail pharmacists in different regions. The questionnaire consists of different sections covering the pattern of stocking essential medications and their consumption during the lockdown, pharmacy preparedness for the COVID-19 pandemic, and the barriers faced by pharmacists on daily activities in the pharmacy in the current scenario.

Statement on ethical issues

Research involving people and/or animals is in full compliance with current national and international ethical standards.

Conflict of interest

None declared.

Author contributions

The authors read the ICMJE criteria for authorship and approved the final manuscript.

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