

Navigating Changes in Patient Drug and Non-Drug Item Demands in Community Pharmacies Amidst the COVID-19 Pandemic

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ABSTRACT

During the COVID-19 pandemic, healthcare systems worldwide faced unprecedented challenges, with pharmacists playing a crucial role on the frontlines. They encountered a surge in patient requests for drugs and non-drug items related to the treatment and prevention of the disease. This cross-sectional survey aimed to assess changes in demand for selected drugs and non-drug items from the perspective of pharmacists in Jordan in the period from March to June 2021, and to explore the factors influencing this demand. An online questionnaire targeting pharmacists working in community pharmacies was developed, validated, and disseminated using social media (e.g., WhatsApp, Facebook, and Messenger). The study collected 390 responses from pharmacists working in community pharmacies. The findings revealed significant increases in demand for prescription drugs such as antibiotics (97.4%), antithrombotics (84.1%), and antivirals (66.2%), often without prescriptions. Non-prescription items, specifically minerals and vitamins, were highly sought after (100%). Demand also rose for non-drug items such as thermometers (89.0%), oximeters (85.1%) and oxygen concentrators (68.2%). Changes in drug requirements were consistent across Jordan's districts. However, an association was observed between the increase in demand for antivirals and herbal supplements and chain pharmacies (p-value 0.037 and p-value <0.005, respectively). In conclusion, COVID-19 led to a significant upsurge in the demand for pharmaceutical products and devices, placing immense pressure on community pharmacies. The public's reaction to the pandemic, to combat and manage the disease, was consistent across Jordan, regardless of social, financial, and spatial differences among the population. The study highlights the importance of adequately preparing and educating pharmacists to provide accurate information and counseling to patients in such circumstances. Therefore, health authorities must ensure that pharmacists have access to the latest treatments and management protocols and provide clear guidance on using home treatment devices to the public.

Keywords: Jordan, COVID-19, pharmacists, community pharmacy, drug demand, self-medication.

INTRODUCTION

Globally, healthcare systems have been confronted with the unprecedented challenges of the Coronavirus

Disease-19 (COVID-19) pandemic since late 2019 (1). Many severe cases of COVID-19 require hospitalization, admission to intensive care units, or may even result in death (2). The pandemic has exerted enormous pressure on healthcare systems worldwide, necessitating the recruitment of all available healthcare resources and professionals to curb the spread of the virus. In response, the World Health Organization (WHO) has issued

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guidelines for the general public on managing mild to moderate cases of COVID-19 at home (3).

Throughout the pandemic, various reports have recommended certain drugs for treating or alleviating symptoms of COVID-19. Some of these treatments were adopted by health authorities, but over time, a few drugs were proven ineffective. Among the suggested drugs were hydroxychloroquine, azithromycin, paracetamol, nonsteroidal anti-inflammatory drugs, and vitamins and minerals including vitamins C and D, and zinc (4-6). Consequently, the lack of a definitive COVID-19 treatment, coupled with high death rates and claims of identifying effective treatments and immune-boosting supplements (7), have led people to seek different preventive measures (4). Simultaneously, self-medication has conspicuously increased during the pandemic in many parts of the world, with Jordan being no exception (4-6).

Under these circumstances, pharmacists have found themselves on the frontlines, dealing with a surge in patients seeking drugs for the treatment of suspected COVID-19 symptoms or for disease prevention (8). In fact, international organizations such as the International Pharmaceutical Federation (FIP) and the American Pharmacist Association (APhA) have issued guidelines to strengthen the roles of pharmacists as frontline healthcare workers during the pandemic (9,10).

Given these circumstances, it is expected that Jordanians, like people in many other countries, will also turn to self-medication during the pandemic. In the literature, several studies have reported self-medication by Jordanians using different drug classes (11-13). However, only a few studies have addressed the impact of COVID-19 on the utilization of drugs and non-drug items among Jordanians. One study investigated the prevalence and predictors of self-medication for certain drug items, as perceived by patients (14). Another study examined the effect of COVID-19 on national antimicrobial consumption, with data on antimicrobial drugs collected from the Jordan Food and Drug Administration (15).

However, it is important to note that no study has yet examined the changes in the consumption and use of drugs and non-drug items from the perspective of pharmacists.

Therefore, this study aims to evaluate the changes in demand for selected drugs and non-drug items in Jordan during the COVID-19 pandemic, based on the perspectives of pharmacists. Additionally, the study seeks to determine whether the demand for these drugs was based on medical prescriptions or self-medication. Furthermore, the study aims to investigate the factors affecting drug demand during the pandemic. This information could help decision-makers understand public behaviors during pandemics and set up necessary measures and policies for future preparedness for epidemics.

METHODS

Study design and instrument

This cross-sectional study was conducted from March to June 2021 during the COVID-19 pandemic. The study used a questionnaire, with pharmacists working in community pharmacies in Jordan as the target audience. The endpoint of this study was to assess whether there was a change (increase or decrease) in the demand for selected drugs and non-drug items during the COVID-19 pandemic in Jordan based on the pharmacists' perspectives. A structured questionnaire was developed based on an extensive review of published research in the same field (5,6,14,16,17). The first page of the questionnaire provided information about the nature and objectives of the study, as well as the inclusion criteria for participation. The inclusion criteria included: (a) working in a community pharmacy during the COVID-19 pandemic, and (b) providing consent to participate in the study. To ensure participants fulfilled the inclusion criteria, two questions were added at the beginning of the survey: 'Have you been working in a community pharmacy during the COVID-19 pandemic?' and 'Do you agree to participate in the study?'. Answering 'No' to any of these questions prevented the participant from completing the survey. The

questionnaire also included a statement assuring participants of the confidentiality of their participation. The questionnaire consisted of two main sections. The first section collected demographic and general characteristics of the pharmacists (Table 1), as well as information about the community pharmacies, such as type of pharmacy and geographical location.

The second section of the questionnaire assessed changes in the demand for different drug categories and non-drug items from the pharmacists' perspectives. The participants were asked to indicate whether they observed a considerable increase, decrease, or no change in the demand for selected drug categories, or non-drug items (e.g., supplements, minerals, and devices, among others) during the COVID-19 pandemic, from a list provided to them (Tables 2 and 3). Regarding drug categories, the participants were asked to specify which class/drug of those categories had shown an increase in demand (Table 2). The questionnaire was designed in Arabic, the native language of the country, and the medication classes were written in both Arabic and English. The questionnaire underwent a thorough review by an academician, a clinical pharmacist, and a community pharmacist. For further clarification and modification of the questionnaire, it was pilot tested with 10 community pharmacists, who were excluded from the statistical analysis.

The questionnaire link was disseminated through various social media platforms for pharmacists, including Facebook®, Facebook Messenger®, and WhatsApp®. The snowball sampling technique was used to distribute the Google form and enroll participants (18,19).

Statistical analysis

A minimum sample size of 385 pharmacists was estimated as appropriate, based on the study by Zucco et al, 2018 (20). Statistical analysis was performed using SPSS version 23 (SPSS Inc., Chicago, IL). Descriptive statistics were used to summarize the demographic characteristics of the participants.

The Chi-square test and Fisher's exact test were utilized to find associations between patterns of use for different drug categories and categorical variables. Hypothesis testing was two-sided, and a p-value of < 0.05 was considered significant.

Ethical consideration

The study protocol was approved by the Institutional Review Board of the Deanship of Academic Research at the University of Jordan (IRB No. 20/2021).

RESULTS

Demographic and General Characteristics of Pharmacists

Three hundred and ninety pharmacists completed the entire questionnaire. The majority of respondents were female pharmacists (63.8%, n=249), and approximately half of them had less than five years of experience (53.6%, n=209). The mean age of respondents was 31.3 years (SD=9.2). Three-quarters (74.4%, n=290) of the pharmacies were independent, and the majority were located in the central district of Jordan (81.8%, n=319).

The demographic characteristics of the participants and the location of the pharmacies are summarized in Table 1.

Table 1 Characteristics of participants in the study (N=390)

Variable	% (n)
Age [mean±SD]	31.3 ±9.2
Gender	
Males	36.2 (141)
Females	63.8 (249)
Pharmacy type	
Chain pharmacy	25.6 (100)
Independent pharmacy	74.4 (290)
Geographical location of community pharmacy	
<i>Central of Jordan</i>	81.8 (319)
Amman, the capital city of Jordan	65.9 (357)
Madaba	2.6 (10)
Zarqa	6.7 (26)
Balqa	6.7 (26)
<i>North of Jordan</i>	15.1 (59)
<i>South of Jordan</i>	3.1 (12)
Years of experience	
<1 year	13.6 (53)
1-5 years	40.0 (156)
6-10 years	21.0 (82)
11-15 years	8.5 (33)
16-20 years	8.5 (33)
21-25 years	3.1 (12)
>25 years	5.4 (21)

Patterns of drug demand

The perceived increase in the demand for different drug classes is summarized in Table 2. Among the prescription drugs, antibiotics reported the highest increase in demand (97.4%, n=380), followed by antithrombotics (84.1%, n=328).

The highest increase in demand for antibiotics (Table 2) was seen for macrolides (95.1%, n=371), followed by fluoroquinolones (37.2%, n=145). Among the antithrombotic drugs, aspirin recorded the highest increase in demand (79.7%, n=311), followed by enoxaparin (31.5%, n=123).

Favipiravir was the most demanded antiviral drug during

the study period (58.7%, n=229).

Minerals and vitamins reported the highest increase in demand among non-prescription drugs (100%, n=390), followed by analgesics and antipyretics (96.9%, n=378), common cold preparations (84.9%, n=331), and herbals and supplements (80.5%, n=314) (Table 2). Both zinc and vitamin C recorded the highest increase in drug demand (98.5%, n=384 and 97.7%, n=381 respectively), followed by vitamin D (88.7%, n=346). Among analgesics and antipyretics, paracetamol (96.9%, n=374) recorded the highest increase in demand. Further details are shown in Table 2.

Table 2. The pattern of drug demand during COVID-19 in Jordan as perceived by pharmacists (N=390), focusing on individual/classes of drugs or non-drug items that showed an increase in the demand

	% (n)
Antibiotics	
The demand did not change.	2.6 (10)
The demand increased significantly:	97.4 (380)
• Macrolides such as azithromycin	95.1 (371)
• Penicillins (amoxicillin, ampicillin, oxacillin, etc)	15.4 (60)
• Oral Cephalosporins (Cephalexin, cefaclor, cefixime, cefuroxime, etc..)	7.2 (28)
• Parenteral cephalosporins, (cefotaxime, ceftriaxone, cefepime, etc)	7.4 (29)
• Fluoroquinolones (Ciprofloxacin, levofloxacin, moxifloxacin, etc)	37.2 (145)
• Doxycycline	3.1 (12)
Antivirals	
The demand did not change.	33.8 (132)
The demand increased significantly:	66.2 (258)
• Oseltamivir (trade name: Tamiflu)	6.7 (26)
• Favipiravir (Sancovir)	58.7 (229)
• Remdesivir (Veklury)	9.2 (36)
Analgesics and antipyretics	
The demand did not change.	3.1 (12)
The demand increased significantly:	96.9 (378)
• Oral paracetamol	95.9 (374)
• Oral ibuprofen	18.5 (72)
• Oral diclofenac (tablets/ sachets)	13.1 (51)
• IM diclofenac	7.7 (30)
• Oral naproxen	12.8 (50)
Antithrombotics	
The demand did not change.	15.9 (62)
The demand increased significantly	84.1 (328)
• Aspirin	79.7 (311)
• Clopidogrel	7.7 (30)
• Warfarin	2.1 (8)
• Heparin	6.7 (26)
• Enoxaparin	31.5 (123)
• Others	7.2 (28)
Anxiolytics and sedatives	
The demand did not change.	69.0 (269)
The demand increased significantly	31.0 (121)

	% (n)
Antidepressants	
The demand did not change.	79.0 (308)
The demand increased significantly	21.0 (82)
Minerals and vitamins	
The demand did not change.	0
The demand increased significantly	100 (390)
• Zinc	98.5 (384)
• Magnesium	14.9 (58)
• Vitamin C	97.7 (381)
• Vitamin D	88.7 (346)
• Vitamin B	16.2 (63)
• Vitamin E	5.6 (22)
• Multivitamins	43.8 (171)
• Iron salts	13.8 (54)
Herbals and supplements	
The demand did not change.	19.5 (76)
The demand increased significantly	80.5 (314)
• Propolis	28.5 (111)
• Omega 3 fatty acids	51.8 (202)
• Immune boosting supplements	46.7 (182)
Cold and cough preparations	
The demand did not change.	15.1 (59)
The demand increased significantly	84.9 (331)
Mucolytics and expectorants	
The demand did not change.	21.8 (85)
The demand increased significantly	78.2 (305)
Antihistamines	
The demand did not change.	33.6 (131)
The demand increased significantly	66.4 (259)

Patterns of non-drug items demand

Among the non-drug items demanded during the COVID-19 pandemic, thermometers reported the highest increase in demand (89%, n=347) followed by oximeters

(85.1%, n=322), oxygen generators (68.2%, n=266), antiseptic lozenges (67.9%, n=265), and nebulizers (67.4%, n=263) as shown in Table 3.

Table 3. The pattern of non-drug items demanded during COVID-19 in Jordan as perceived by pharmacists (N=390)

Non-drug items	The demand increased significantly	The demand didn't change	The demand decreased significantly
- Antiseptics lozenges e.g Strepsils®, Halls®, Ricola®	67.9 (265)	30.5 (119)	1.5 (6)
- Normal saline (IV infusion)	43.3 (169)	53.1 (207)	3.6 (14)
- Oximeters	85.1 (332)	12.6 (49)	2.3 (9)
- Thermometers	89.0 (347)	10.8 (42)	0.3 (1)
- Nasal solutions containing normal saline or seawater	64.4 (251)	34.1 (133)	1.5 (6)
- Clove oil	37.7 (147)	58.2 (227)	4.1 (16)
- Menthol rub	52.6 (205)	43.6 (170)	3.8 (15)
- Nebulizers of inhaled drugs	67.4 (263)	31.8 (124)	0.8 (3)
- Oxygen Concentrators/generators	68.2 (266)	29.5 (115)	2.3 (9)

As demonstrated in Table 4, in more than 50% of the interactions with customers, less than half of the

pharmacists indicated that their customers provided prescriptions for prescribed drugs.

Table 4: providing a prescription for prescribed drugs

Prescription Drug	Provided prescription in less than 25% of encounters	Provided prescription in 25-49% of encounters	Provided prescription in 50-75% of encounters	Provided prescription in more than 75 % of encounters
Antibiotics	38.1 (138)	44.2 (160)	14.4 (52)	3.3 (12)
Antivirals	32.8 (114)	34.8 (121)	17.5 (61)	14.9 (52)
Analgesics	72.4 (257)	20.3 (72)	6.2 (22)	1.1 (4)
Antithrombotics	38.8 (137)	35.7 (126)	16.1 (57)	9.3 (33)
Anxiolytics or antidepressants	34.4 (118)	24.2 (83)	20.7 (71)	20.7 (71)

Table 5 shows the association of drug demand with the type of pharmacy (independent/chain) and the pharmacy's location in terms of districts. A significant association was seen between the increased demand for antivirals and herbal supplements and chain pharmacies (p-value 0.037 and p-value <0.005, respectively). On the other hand, there

was no association between the demand for prescription or non-prescription drugs and the pharmacy's location. Additionally, no significant correlation was found between gender, years of experience, or pharmacy location and drug demand (p>0.05).

Table 5. The pattern of drugs demanded during COVID-19 in Jordan as perceived by pharmacists (N=390)

Drug's category		Area categories and districts cross-tabulated with the drug demand patterns				
		Pharmacy type		District location		
		Chain	Independent	Central	South	North
<u>Prescription drugs</u>						
	Increased	97 (97)	97.6 (283)	97.8 (312)	100 (12)	94.9 (56)
	Unchanged	3 (3)	2.4 (7)	2.2 (7)	0 (0)	5.1 (3)
	<i>P value</i>	0.721 ^a		0.412 ^a		
1. Antibiotics						
	Increased	75 (75)	63.1 (183)	68 (217)	8 (66.7)	55.9 (33)
	Unchanged	25 (25)	36.9 (107)	32 (102)	33.3 (4)	44.1 (26)
	<i>P value</i>	0.037 ^b		0.205 ^a		
2. Antivirals						
	Increased	36 (36)	29.3 (85)	32.6 (104)	16.7 (2)	25.4 (15)
	Unchanged	64 (64)	70.7 (205)	67.4 (215)	83.3 (10)	74.6 (44)
	<i>P value</i>	0.259 ^b		0.375 ^a		
3. Anxiolytics and sedatives						
	Increased	24 (24)	20 (58)	20.1 (64)	16.7 (2)	27.1 (16)
	Unchanged	76 (76)	80 (232)	79.9 (255)	83.3 (10)	72.9 (43)
	<i>P value</i>	0.477 ^b		0.420 ^a		
4. Antidepressants						
	Increased	88 (88)	82.8 (240)	83.7 (267)	83.3 (10)	86.4 (51)
	Unchanged	12 (12)	17.2 (50)	16.3 (52)	16.7 (2)	13.6 (8)
	<i>P value</i>	0.267 ^b		0.867 ^a		
5. Antithrombotic						
	Increased	98 (98)	96.6 (280)	97.2 (310)	100 (12)	94.9 (56)
	Unchanged	2 (2)	3.4 (10)	9 (2.8)	0 (0)	5.1 (3)
	<i>P value</i>	0.738 ^a		0.597 ^a		
<u>Nonprescription drugs</u>						
	Increased	93 (93)	76.2 (221)	80.9 (258)	83.3 (10)	78 (46)
	Unchanged	7 (7)	23.8 (69)	19.1 (61)	16.7 (2)	22 (13)
	<i>P value</i>	<0.005		0.882 ^a		
7. Herbal supplements						
	Increased	90 (90)	83.1 (241)	84 (268)	100 (12)	86.4 (51)
	Unchanged	10 (10)	16.9 (49)	16 (51)	0 (0)	13.6 (8)
	<i>P value</i>	0.107 ^b		0.379 ^a		
8. Cold and cough preparations						
	Increased	79 (79)	77.9 (226)	77.1 (246)	91.7 (11)	81.4 (48)
	Unchanged	21 (21)	22.1 (64)	22.9 (73)	8.3 (1)	18.6 (11)
	<i>P value</i>	0.889 ^b		0.486		
9. Mucolytics and expectorants						
	Increased	65 (65)	66.9 (194)	67.1 (214)	66.7 (8)	62.7 (37)
	Unchanged	35 (35)	33.1 (96)	32.9 (105)	33.3 (4)	37.3 (22)
	<i>P value</i>	0.806 ^b		0.772		
10. Antihistamines						
	Increased	65 (65)	66.9 (194)	67.1 (214)	66.7 (8)	62.7 (37)
	Unchanged	35 (35)	33.1 (96)	32.9 (105)	33.3 (4)	37.3 (22)
	<i>P value</i>	0.806 ^b		0.772		

^a *p values* were calculated using Fisher's exact test, ^b *p values* were calculated using Pearson Chi-square test

DISCUSSION

In this study, we evaluated the impact of COVID-19 on the changing demand for medications and non-drug items among Jordanians from the perspectives of pharmacists. During the study period (March to May 2021), Jordan experienced a severe second wave of COVID-19, resulting in the highest daily new cases and deaths since the onset of the pandemic

(<https://www.worldometers.info/coronavirus/country/jordan/>). Given these circumstances, a substantial increase in demand for specific drugs was expected, which was indeed evident in our study. All participants reported an increase in the demand for minerals and vitamins compared to previous years. This rise in demand can be attributed to these supplements being included in Jordan's Ministry of Health's treatment protocol for mild COVID-19 cases (21), allowing self-medication without a prescription. This trend was also noted in other countries such as Kuwait and Nigeria (22,23). The increased demand for vitamins, coupled with the rise in demand for herbal supplements, reflects the public's concerns about enhancing their immunity and protecting themselves from this viral infection.

Nearly 97% of participants indicated a significant increase in the demand for antibiotics, primarily macrolides and fluoroquinolones. Azithromycin was one of the drugs recommended for managing COVID-19 patients during a certain period of the pandemic (24). Similarly, some reports proposed the use of fluoroquinolones as adjunct treatment for COVID-19 (25). This increased demand was likely fueled by information circulating on social media regarding their use in COVID-19 management (26). This demand was boosted by the fact that antibiotics in Jordan can be procured from pharmacies without a prescription (11). Moreover, around 82% of the participants indicated that antibiotics were requested without a prescription in more than 50% of interactions. In Jordan, although regulations prohibit the dispensing of antibiotics without a prescription, these regulations are not

strictly enforced (11). This trend of self-medication with antibiotics during COVID-19 was observed in other countries as well (6,17,27,28).

A substantial rise in demand for analgesics and antipyretics (96.9%) was reported, with paracetamol being the most requested drug. This aligns with the common symptom profile of COVID-19, which includes fever and muscle aches. Paracetamol is recommended by the Ministry of Health (21) and the CDC for treating these symptoms as a home remedy for mild cases (29). It was also the most consumed medication during COVID-19 lockdowns in Peru and Yemen (5,17).

Overall, there was a notable increase in demand for drugs used to alleviate COVID-19 symptoms, such as cough and cold preparations and mucolytics and expectorants.

Additionally, a significant increase was observed in the demand for antithrombotic drugs (mainly aspirin and enoxaparin) and, to some extent, anxiolytics and sedatives. It is apparent from Table 4 that the increase in demand for these drugs was for self-medication since, in the majority of encounters, less than 50% of customers provided prescriptions for these drugs. The demand for antithrombotic drugs was likely due to the thromboinflammatory syndrome associated with severe to critical COVID-19 illness (30), which prompted recommendations for their use in specific cases (21). Subsequently, aspirin, being a cheap and over-the-counter drug, was the most demanded in this group. However, it is worth mentioning that health authorities do not recommend the use of these drugs for non-hospitalized patients with COVID-19 to treat venous thromboembolism or arterial thrombosis unless they were indicated for other conditions (31).

Epidemics and pandemics are recognized to heighten the prevalence of psychological disorders driven by stress, anxiety, and fear (32). This concern prompted the WHO and CDC to emphasize the importance of mental health during the COVID-19 pandemic (33,34). In Jordan, these

psychological effects were evident as approximately one-third of our study participants reported an increased demand for anxiolytics and antidepressants. Consistent with our findings, a recent study among healthcare workers in Jordan revealed that 40% of the participants had suffered from severe depression (35). During the pandemic, efforts have primarily focused on treating affected individuals and containing the spread of the disease, with less attention paid to the psychological impact on the population. Based on our findings, it is crucial for health authorities to prioritize mental health during epidemics, providing guidance and support to help individuals maintain their mental well-being.

We also noted a substantial increase in the demand for non-drug items among participants, including thermometers, oximeters, and oxygen generators. The shortage of medical oxygen has been a global issue during the COVID-19 pandemic, with supply falling short of the increased demand (36,37). This problem was particularly acute in poorer countries already grappling with oxygen supply shortages (36,37). It appears that Jordanians sought to acquire oxygen concentrators/generators for home use, contributing to the increased demand for these devices during the study period. However, to prevent the misuse of these concentrators or the unwarranted confidence that they might provide, leading to a false sense of control over a patient's condition at home, it is crucial to educate pharmacists and raise public awareness about the correct use and potential risks associated with these devices. Such education is paramount to ensure that patients seek medical attention when necessary.

We sought to investigate whether changes in drug demand were associated with specific regions within Jordan. The districts were categorized into three regions: north, central, and south, and a statistical analysis was performed among these regions (see Table 5). The central region includes the capital city Amman, which has a higher proportion of the population and wealthier individuals. The results revealed no significant difference, indicating

that changes in drug requirements were similar throughout the country, regardless of social, financial, or spatial differences.

Likewise, no significant difference in the change in drug demand was found between chain and independent pharmacies, with the exception of antiviral drugs and herbal supplements. Nevertheless, although a statistical difference was detected in the demand for these two items between chain and independent pharmacies, the demand for these items increased in both types of pharmacies.

CONCLUSION

The COVID-19 pandemic has led to significant changes in the demand for pharmaceutical products, including prescription and non-prescription drugs, supplements, and non-drug items. The public's reaction to the pandemic, in terms of securing medicines and necessary devices to fight and manage the disease, was consistent across different districts. This indicates that social, financial, and spatial differences disappear when lives are threatened by a pandemic. Consequently, pharmacists face increasing pressure to dispense prescription drugs without prescriptions, as well as other supplements and devices. This highlights the importance of preparedness and education for pharmacists to provide correct information and advice to patients. Also, during times of pandemics, health organizations should step up to provide pharmacists with the latest treatments and management protocols to ensure the delivery of accurate information to this frontline health sector. Moreover, health authorities should prioritize mental health during epidemics and provide guidance through various media channels to help individuals maintain their mental well-being. Additionally, attention should be given to the use of various devices for home treatment, with clear advice and guidelines for the public to follow.

Limitations of the study

The questionnaire was distributed through various social media platforms used by pharmacists, including

Facebook, WhatsApp, and Messenger. This could potentially introduce bias since only individuals with internet access or those who are active on these platforms would have the opportunity to participate in the study. Moreover, most participants were young, female, and working in pharmacies located in central Jordan, which could affect the generalizability of the conclusions drawn from the study. Finally, the study was based on the perceptions of pharmacists, which could be subjective and

reflect the views of those who responded to the online questionnaire.

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Conflict of Interest

The authors declare no conflict of interest

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استكشاف التغيير في طلب المواد الدوائية وغير الدوائية من صيدليات المجتمع خلال جائحة كوفيد-19

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ملخص

خلال جائحة كوفيد 19، واجهت أنظمة الرعاية الصحية حول العالم تحديات غير مسبوقة حيث لعب الصيدلة دور مهم على خطوط المواجهة مع المرض. واجه الصيدلة قفزة كبيرة في طلبات المرضى لتأمين الأدوية ومواد غير دوائية لمعالجة أو الوقاية من المرض. تهدف هذه الدراسة المستعرضة لتقييم التغييرات في الطلب على بعض الأدوية ومواد غير دوائية في الأردن خلال الفترة من آذار إلى حزيران 2022 بناء على إدراك الصيدلة وكذلك للكشف عن العوامل التي تؤثر على هذا الطلب. تم تجهيز إستبانة تستهدف صيادلة المجتمع والتثبت منها وتوزيعها عبر صفحات وسائط التواصل الاجتماعي (واتساب، فيسبوك، ومسنجر) التي تضم الصيدلة. بهذه الدراسة تم جمع بيانات من 390 صيدلاني يعملون بصيدليات المجتمع. بينت النتائج وجود زيادة معتبرة إحصائياً في الطلب على الأدوية التي تحتاج لوصفة طبية مثل المضادات الحيوية (97.4%) ومضادات التخثر (84.1%) ومضادات الفيروسات (66.2%) التي في أغلب الأحيان كانت تطلب دون تقديم وصفة. إزداد الطلب 100% على المواد التي تصرف بدون وصفة مثل المعادن والفيتامينات. كذلك إزداد الطلب على المواد غير الدوائية مثل أجهزة قياس تركيز الأكسجين (85.1%)، وموازين الحرارة (89.0%)، ومولدات الأكسجين (68.2%). التغييرات بطلب الأدوية كانت متشابهة بين محافظات الأردن. على أي حال، تبين وجود ارتباط بين الزيادة في طلب مضادات الفيروسات والمكملات العشبية مع الصيدليات التابعة لسلسلة صيدليات (p-value = 0.037 و p-value < 0.005 على التوالي). في النتيجة، جائحة كوفيد 19 أدت لتغيرات جوهرية في زيادة الطلب على المستحضرات الصيدلانية، مما يشكل ضغط هائل على صيدليات المجتمع. إن تفاعل عامة الناس مع الجائحة لمحاربة وإدارة المرض كانت متشابهة عبر الأردن بغض النظر عن الفوارق الإجتماعية والمادية والمكانية بين السكان. فهذه الدراسة تسلط الضوء على أهمية تدريب وتحضير الصيدلة لظروف مشابهة ليتمكنوا من تقديم معلومات واستشارات دقيقة للمرضى. بناءً عليه، على السلطات الصحية أن تضمن وصول أحدث بروتوكولات العلاجات وطرق متابعة المرضى للصيدلة وتوفير إرشادات واضحة لعامة الناس عن كيفية استخدام أجهزة المعالجة المنزلية.

الكلمات الدالة: الأردن، كوفيد-19، الصيدلاني، التداوي الذاتي، صيدليات المجتمع.

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