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Pharmaceutical Services And Pharmacy Economies In Sivas Before And After The Covid-19 Pandemic. An Ethical Analysis

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ABSTRACT: The research was conducted to investigate the effects of the COVID-19 pandemic on the pharmacy services and pharmacy economies in Sivas community pharmacies. This study employs a descriptive and quantitative research design. Questionnaire and informed consent forms were distributed to participants online. Only volunteers who provided informed consent were included in the study. During the pandemic, the workload of community pharmacists increased, and pharmacists could not receive support from any governmental institution to protect themselves against the ongoing disease. They also had to deal with economic difficulties due to decreased pharmacy revenues, expiration dates, and stock losses. Moreover, due to their assignment in vaccine and mask distribution, the risk of transmission in pharmacies has increased significantly.In addition, the unfair accusations which made against pharmacists due to the rise in mask prices and the disclosure of their names have created other problems for pharmacists.It has been observed that pharmacies applied for bank loans to provide business financing, or pharmacists had to sell their savings and add itto the their pharmacies' capital.There were no institutions to support pharmacists within this economical struggle period.It has been determined that uncontrolled drug sales on the internet (agricultural and veterinary drugs) and non-pharmacysales of food products had disrupted the incomebalance of pharmacists and these factors resulted pharmacies to have difficulty in paying. During the pandemic, all health professionals, including pharmacists, worked with great devotion, but these sacrifices could not be seen or acknowledged by many. The COVID-19 pandemic has brought financial trouble to community pharmacists, who are more likely to be small business owners. In addition to the fact that community pharmacists were caught unprepared for the pandemic, it was found that all the problems detected were an opportunity to learn from the current situation. Our findings are intended to guide preparing a "national emergency action plan" for possible out-of-control situations (such as earthquakes, fires, floods, pandemics etc.).

KEYWORDS: Covid-19; pharmacy economies; pandemic; community pharmacies; ethical and economic analysis.

1. INTRODUCTION

The COVID-19 Pandemic has become a global health problem, infecting more than 6 million individuals in the world since the beginning of 2020[1,2]. Healthworkers who dealt with the diagnosis and treatment of the diseases during the pandemic have been in close contact with COVID-19 patients and have become an occupational group whose health is at great risk[1-3]

The existence of the pandemic process was officially accepted in our country on 10/01/2020 with the establishment of the "Coronavirus Science Board and Operation Center" affiliated with the Ministry of Health. On 21/03/2020, test centers were established and spread in many hospitals. While distance education started on 23/03, "life fits home/hayat eve sığar" campaigns were llaunched with curfew restrictions. COVID-19 death numbers began to be announced to the public on 29/03. Intercity travel bans on 03/04, and curfewb egan on 04/04/2020.

Community pharmacists, who have the status of 1st level Health care providers, continued their 24/7 hours work shift un interrupted during the pandemicas the Health workers that the public can reach

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mosteasily. Pharmacists tookcare of the patients who came to the pharmacy with complaints such as "I have flu" and "I have a fever" at the beginning of the epidemic, when the symptoms were unknown. Community pharmacists received their prescriptions and directly contacted all patients without any physical distancing.

As a matter of fact, the first person who died of COVID-19 in Turkey was a pharmacist called Ecz. İhsan Giray (17/03/2020). As the pandemic progressed, the roles of community pharmacists and hospital pharmacists in our country[3-7] and in the world[8-14], and prevention methods from the epidemic were determined by the researchers, and it was seen that all Health care workers struggled with similar problems. As a matter of fact, pharmacists in our country continued their work undergreat risk during the "COVID-19 pandemic, (16/03/2020), even though places of worship were closed[14,15]. Even under curfew limitations, which were applied for about 3 months to both people groups (including 65 years old people and older and those who are 20 years old and under) pharmacists prepared and delivered the prescriptions to their patients.

- Pharmacy working hours were regulated, pharmacies were exempted from the ban and remained open even on curfew days, and the shifts continued uninterrupted.

- Pharmacists also briefed the public on prevention and treatment protocols for opportunist infections that appeared with COVID-19.

- It has been decided to supply the prescribed medicines of patients with chronic diseases directly from pharmacies without going to a Health institution, and pharmacies have delivered the medicine to the patient without interrupting this service.

- And finally, pharmacists were given a "public duty" by the state in the form of free mask distribution and free fluvaccine distribution to citizens (05/04/2020). Pharmacists have successfully fulfilled these services, too.

- During the pandemic period, people who came from abroad were quarantined in the dormitories of Sivas Credit and Hostels Institution, and community pharmacists provided medicines under the coordination of the 37th Region Sivas Chamber of Pharmacists. (In this process, it is a fact that the majority of peoplecoming from abroad did not have any sort of social security, and their medicines are financed by pharmacists.)

- In addition, not even a single institution has started a project on "How pharmacies should be protected from the epidemic", and pharmacists were left alone in this sense. Each pharmacist has taken their own pre-cautionswith the reflex of a Health care professional.

- In addition to all these duties, pharmacies continued their primary services. This situation has exposed pharmacists and pharmacy workers to a great risk of contamination. Our pharmacists had to deal with both the epidemic and economic problems, which have triggered an on going economic challenge.

In this research, we aimed to examine the effects of the COVID-19 pandemic on the service delivery, economic situation, and ethical practices of community pharmacies in Sivas.

2. RESULTS

51 of 195 Sivas pharmacists participated in there search voluntarily. At the first stage, the health conditions of pharmacists and their employees were examined during the pandemic period. It was determined that among these 51 pharmacies, in 9 out of 51 the pharmacists were infected with coronavirus, and in 20 out of 51 the pharmacy workers were infected with coronavirus (In Sivas, 3 of our pharmacist colleagues died due to coronavirus, and they are not included in the study data). The participants' socio-demographic information and distribution are shown in Tables 1A and 1 B. 20 (39.2%) were female pharmacists, and 31 (60.8%) were male pharmacists. Forty-two pharmacists (82.4%) are married, and 9 (17.6%) are single. Forty-six participants (90.2%) live in an elementary family type. Forty-two pharmacists (82.4%) received bachelor's of pharmacy degrees, 8 (15.7%) master's degrees, and 1 (2%) doctorate degrees (Table 1A).

Twenty-seven participants (52.9%) are between the ages of 25-44. There is a Health institution near 26 pharmacies (51%). Fifteen (29.4%) of the participants were identified as having a community pharmacy for less than 10 years, 19 (37.2%) of the participants had a community pharmacy for 10-29 years, and 17 pharmacists (33.4%) for 30 years or more (Table 1B).

Pharmacists were asked about their workload; 29 (56.9%) pharmacists described their work as 'heavy.' 30 pharmacists (58.8%) stated that they had time problems, 31 (60.7%) of the pharmacists stated that they worked in thepharmacyfor 8-10 hours, and 22 (43.1%) pharmacists saidthat they could not spare enough time for their families (Table 2).

Pharmacists were asked about the basic product buyer. Before and after the pandemic, SGK (Turkish Social Security Institution) was the main buyer of 49 (96.1%) of 51 pharmacists. While 46 pharmacies (90.2%)

declared that the sale of drugs by prescription before the pandemic was the main income of thepharmacy, 44 pharmacies after the pandemic said that their main income was from drug selling (86.3%) (Table 3).

Before the pandemic, 25 pharmacists (49.1%) claimed that they constantly felt stressed; this number increased to 36 (70.6%) during the pandemic period. When the pharmacy economies were examined before and after the pandemic, one pharmacist (2%) declared a monthly income of 3000.- TL, this number increased to 6 people (11.8%) during thepandemic. The number of 16 pharmacists (31.4%) who declaredin comeover 12.000.- TL before the pandemic decreased to 2 people (27.5%) during the pandemic.

Before and after the pandemic, pharmacist was asked about "satisfaction with pharmacy income"; Before the pandemic, 34 (66.7%) pharmacists said "I am satisfied with my job", and 13 (24.9%) pharmacists said "I am not satisfied at all", during the pandemic; The number of pharmacists who said "I am not satisfied" increased to 24 (47.0%) while three people were "undecided" (5.9%). Employment status of employees in the pharmacy before and during the pandemic was asked; While the number of pharmacies that employe person before the pandemic was 4 (7.8%), it became 8 (15.7%) pharmacies during the pandemic; While the number of pharmacies employing four or more people was 2 (3.9%), it was determined as 3 (5.9%) pharmacies (Table 4). While 45 (88.2%) pharmacies could maintain their pharmacy working capital with only pharmacy income before the pandemic, this number decreased to 40 (78.4%) during the pandemic. The number of pharmacists who obtained a business loan from the bank increased from 2 (3.9%) to 5 (9.8%) (Table 4).

Pharmacists were also asked about their "future plans"; Only 31 (60.7%) of 51 pharmacists stated that they would continue too per ate a pharmacy. The question "What do you think is the biggest danger threatening pharmacies and the pharmacy profession?" was asked; It was statedby 26 pharmacists (51%) that newly opened pharmacy faculties (with no sufficient staff either) are the biggest threat. 18 pharmacists (35.2%) stated that the rumors of opening pharmacy chains as a result of theen forcement of the current law on by newly graduated pharmacists is these cond biggest threat. On the other hand, it was stated by 41 pharmacists (80.4%) that ales of veterinary drugs, pesticides and food supplements out of pharmacies caused a greatloss in pharmacy revenues (Table 5).

3. DISCUSSION

Pharmacies are the most easily accessible health centers, and pharmacists are the closest health consultants. In this respect, in case of any disease symptoms, especially during epidemic periods, they are the first Health care institutions and people to be approached by the patients. However, pharmacies can also become a source of epidemic if necessary precautions won't be taken. Therefore, it is very important for public health to take preventive measures, primarily in pharmacies, in the fight against epidemics[4-14]. During the pandemic, pharmacists were not provided with support and information regarding new types of coronavirus protection methods, which have a very high risk of transmission. Pharmacists have taken precautions with their own reflexes[4-7]. Community pharmacies world wide have taken measures to prevent the epidemic with similar methods. The main thematic challenges these can be given as: Bureaucratic obstacles, the logistics supply chain (which is not ready for an emergency case), and pharmacists who are not trained for epidemic prevention. It has been seen that it causes an increase in deaths in countries that have limited resources, and in line with the epidemic experiences and within the framework of interactive crisis management, suggestions for more effective and efficient management of other pandemic crises that may occur in the future have been brought to the agenda. Our topic is current, but there is not much literature to compare. In all studies, the importance of the role of pharmacists in publichealth has been emphasized [4- 6, 8- 14, 17- 25].

In the survey study conducted by the Turkish Pharmacists Association (TEB) with 1372 pharmacies in all regions throughout the country, the rate of COVID-19(+) was determined as 49.9%. From the participating 51 pharmacies, 9 out of the 51 pharmacies' pharmacists and 16 out of the 51 pharmacy workers had COVID-19 (+), which shows that a total of 25 people got infected. Our finding sare very close to the rate found by TEB for pharmacies.[6] During the pandemic period, it has been revealed that the workload of all pharmacists, as well as work stress, has increased[21-23]. In the context of "Satisfaction with Pharmacy Revenue" before and after the pandemic, the rate of "satisfaction" before the pandemic (66.7%) decreased to 47% after the pandemic. In otherwords, the rate of in comedissatisfaction has increased.

Before the pandemic, 45 pharmacies were able to maintain their working capital with only pharmacy revenues, but after the pandemic, this number decreased to 40, and to over come economic difficulties, it became necessary to take a business loan from the bank, dispose of their assets, etc. In the future, the options of doing additional work to earn their live lihood came to the fore. Similarly, a study conducted in SaudiArabia

determined that pharmacists experienceda 10% loss of income[16]. In the study of Çalıkuşu, the COVID-19 pandemic affected all sectors economically, and the income of pharmacy pharmacists decreased (44.5%) during the pandemic; It was determined that more than half (52.6%) of them experienced economic distress[5].The research findings conducted by TEB also supportour findings[6]. However, Bilgener[24] reached the conclusion in his research that "pharmacists did not have financial difficulties because they made their SGK payments regularly" and this finding is definitely inconsistent with our research. SGK payments were not disrupted, but the number of prescriptions and cash flow of pharmacies decreased.

When our finding sare examined, the main buyer of 96.1% of pharmacies is SGK. While it was stated that the main pharmacy income item (90.2%) before the pandemic was giving prescriptions, this rate decreased to 86.3% during the pandemic. Similar results were seen in the TEB survey. Patient admission by hospitals or the fact that patients were not going to hospitals with the fear of contagion has reduced the number of outpatient (group B) prescriptions to almost nothing. Without B-group prescriptions with higher profitability, pharmacy economies began to have difficulties. Eventhough the pharmacies' regulation of patient prescriptions with reports relieved the pharmacist to some extent, the decrease in drug sales increased the number of expired drugs and caused financial losses to many pharmacies that had to work withstock.

It was stated by 41 (80.4%) of 51 participating pharmacists that one of the reasons for the great decrease in pharmacy revenues was the sales of veterinary and agricultural drugs and food supplements, which the Ministry of Agriculturel acknowladge these items' selling locations went out of pharmacies. 32 (62.7%) pharmacists noted that some products sold over the Internet harm publich ealth. During the pandemic, many people bought food supplements, OTC drugs, and vitamins from the internet instead of a pharmacy; then, patients came with the question of "how are we going to use it?" to the pharmacy to ask for instruction guiadance. This has two meanings: 1) Pharmacists are trusted advisors. 2) The sale of products containing active pharmaceutical ingredients, which is the main source of income for the pharmacy sector, over the internet has not been banned by the authorities even during this period.

The number of staff in pharmacies has been increased in order not to interrupt the service due to the illness of the employees during the pandemic. This situation has shown that there was noincrease in income, but the personel expenditures has enormously increased. While the pharmacists were waiting for the increase in the profitrates as a way out to improve their economic situation a little bit and the granting of their Professional rights, the urgentupdating of the renewed and disappointing "drug price decree" was declared.

4.CONCLUSION

It has been seen during the COVID-19 pandemic that pharmacists have served as essential first-line care givers to provide medication information and the management of medication the rapies based on their personal sacrifices, but there is a limited examination of the complexities of their role in the triage of care and referrals of community members to other health professionals. Personal sacrifices to provide a range of Professional Health Services are not recognized by the Scientific Committee eestablished by the Ministry of Health. In addition, pharmacists were blamed for the suddenly rising prices of masks, and the names of pharmacies were disclosed illegally. In addition to the loss of reputation and work-life balance, pharmacists have facedongoing and increasingly severe economic problems since the pre-pandemic period. They are stil continuing the economic "existence" war.

Pharmacists, who practice their profession selflessly by adhering to their oathunder all circumstances, have successfully managed this difficult pandemic process despite not receiving training for disaster management. Every pharmacist and pharmacy employee has caught coronavirus at least once during this process, and many pharmacists died due to pandemic. Despite all this, they continued to serve in their pharmacies during the pandemic and provided medicine and food to patients' homes.

In this context, pharmacists reiterated their demands: The Ministry of Healths hall give the licence to sell all types of drugs, including agricultural and veterinary medicines, food stuff, and food supplements, only to pharmacies and ban the sales of all products containing drug-active ingredients through the internet.

After pandemics aftermath (in which it has been stated that nothing in the worldwill be the same as before) Pharmacists expect TEB –pharmacist's roof organization- to do this; In the process of preparing interactive crisis management for possible future pandemics, etc., to be a guide for taking measures to managecrises more effectively and efficiently, to announce their unbearable economic problems, their "silent cries" and their demands to put health authorities in action.

5. MATERIALS AND METHODS

Before starting the research, an application was made to the Üsküdar University Non-Interventional Research Ethics Committee, and the approval of the Ethics Committee was obtained (29/11/2021; 61351342/November 2021-37). The research is in the descriptive quantitative research type and complies with the principles of the Declaration of Helsinki. The prepared questionnaires were delivered to pharmacists in Sivas city center and its districts via online, "due to the fact that the study was conducted during the pandemic". With the informed consent form, the participants were informed and participated in the study by obtaining their consent. The sample size represents a total of 195 pharmacies in Sivas, 138 in the center, and 57 in the districts, was determined as 51 with a sampling error of 0.10 and a probability of 0.5.15 The data obtained as a result of the survey were expressed in numbers and percentages.

In the first part of the research questionnaire, socio-demographic information of community pharmacists in Sivas was determined. In the second part of the questionnaire, it was made to determine the perspective of community pharmacists regarding their role in managing the coronavirus pandemic, the possible income losses of pharmacists before and after the pandemic, and the methods they used to solve their problems. In addition, current health policies were also examined with question[16].

Table 1A. Distribution of Socio-Demographic Information of Pharmacists Participating in the Study

		NUMBER	%		NUMBER	%	NUMBER	%
Gender	Woman	20	%39.2	Male	31	%60.8	51	%100
Marital Status	Married	42	%82.4	Single	9	%17.6	51	%100
Family Type	Wide	5	%9.8	Seed	46	%90.2	51	%100
Academic Year	4 years	42	%82.4	5 year	9	%17.7	51	%100

Table 1B. Distribution of Socio-Demographic Information of Pharmacists Participating in the Study

		N	%		N	%		N	%		N	%		N	%	T
Age	25-34	15	29.5	35-44	12	23.5	45-54	9	17.6	55-64	6	11,8	65+	9	17.6	51
Free Pharmacy Period	<10 Less than years	15	29.4	10-19	7	13.7	20-29	12	23.5	30 >over the year	16	31.4	-	-	-	51
Other Professions	Pharmacy	4	8.9	Academician	2	4.4	Officer	10	22.2	Trade	5	11.2	Other	19	42.3	51
Pharmacy Location	Street	14	27.5	Neighborhood Pharmacy	6	11.8	Hospital Surroundings	18	35.3	Health center, Polyclinic,	8	15.7	Work Place density, city center banks, etc.	5	9.8	51

N: Number

Table 2: Pharmacist's Work and Stress Load

Subject		N	%		N	%		N	%		N	%	Total
How many hours do you stay at the Pharmacy?	7 <	14	27.5	7-8	18	35.3	9-10	13	25.5	10>+	6	11.8	51
How would you describe your work load?	Difficult	8	15.7	Heavy	21	41.2	Not heavy	22	43.1	Unstable	-	-	51
Do you have enough time?	Always	8	15.7	Most of the time	22	43.1	Sometimes	17	33.3	Very rarely	4	7.8	51
Do you have time left for private life?	I separate	17	33,3	May be	12	23,5	I'm undecided	12	23,5	I can't separate	10	19.6	51

N: Number

Table 3: Important Product Buyers and İmportant Product Groups of the Pharmacist

	N	%		N	%	Total

Your pharmacy's most important product buyer. Prepandemic and pandemic period	SGK	49	96.1	Cachs ales	2	3.9	51
BEFORE PANDEMIC What are the product groups that your pharmacy sells the most?	Prescription medicine	46	90.2	Sales revenue of non-pharmaceutical products	5	9.8	51
PANDEMIC PERIOD What are your Pharmacy's Top Selling Product groups?	Prescription medicine	44	86.3	Sales revenue of non-pharmaceutical products	7	13.7	51

N: Number

Table 4: Economic status of pharmacists before and after the pandemic

		N	%		N	%		N	%		N	%		Number	%	Total
Pre-pandemic; *Monthly income (TL)*	3000	1	2.0	3001-5999	13	25.5	6000-8999	13	25.5	9000-11999	8	15,7	12000+	16	31,4	51
Pandemic period*: Monthlyincome (TL)*	3000	6	11.8	3001-5999	8	15.7	6000-8999	16	31.4	9000-11999	7	13.7		14	27.5	51
Pre-pandemic; Satisfied with his job in terms of earnings?	Not satisfied at all	3	5.3	Not glad	10	19.6	Glad	24	47.1	Very plased	10	19.6	Undecided	4	7.8	51
Pandemic period; Satisfied with his job in terms of earnings?	Not satisfied at all	12	23.5	Not glad	12	23.5	Glad	17	33.3	Very plased	7	13.7	Undecided	3	5.9	51
Pre-pandemic: how many staff were working?	1	4	7.8	2	36	70.6	3	7	13.7	4>	2	3.9	Undecided	2	3.9	51
Pandemic period: how many staff are working?	1	8	15.7	2	28	54.9	3	10	19.6	4>	3	5.9	Undecided	2	3.9	51
Pre-pandemic – Stress at work	Frequently	14	27,5	Continually	11	21,6	Sometimes	23	45.1	Never	3	5,9	Other	-	-	51
Pandemic period- Stress at work	Frequently	20	39,2	Continually	16	31,4	Sometime	11	21,6	Never	4	7,8	Other	1	2,8	51
Pre-pandemic – How does the Pharmacy finance?	Pharmacy revenues only	45	88.2	Transfer from other assets to pharmacy	4	7.8	Getting a loan from the bank or TEB	2	3.9	Borrowing	-	-	Other	-	-	51
Pandemic period- How does the Pharmacy provide financing?	Pharmacy Revenues only	40	78.4	Transfer from other assets pharmacy	6	11.8	Getting a loan from the bank or TEB	5	9.8	Borrowing	-	-	Other	-	-	51

N: Number

Table 5. Common Wiews for Pharmacy Economies

		N	%		N	%		N	%		N	%	Total	%
Pharmacists' Plans for the Next FiveYears	Maintaining a self-employed pharmacy	31	60.8	Self-employed pharmacist and doing another job	6	11.8	Be retired	10	19.6	Planning a business outside of pharmacy	4	7.8	51	100
What do you think is the biggest threat facing pharmacists in the coming years?	IncreasingNumber of Faculty of Pharmacy	26	51	ChainPharmaciesthreat	9	17.6	Coercion of Pharmacists who do not have the right to open a pharmacy	9	17.6	Falling profitrates	4	7.8	51	100
Food – Veterinary Medicines – Is it right to sell pesticides outside the pharmacy?	True	33	64.7	Wrong	5	9.8	Partially true	5	9.8	Absolutely wrong	8	15.7	51	100
Veterinary drugs - Agrochemicals -food supplements "afterall, they are drugs and must be licensed by the Ministry of Health" is it right?	True	42	96.1	Partially true	5	9,8	Wrong	2	3,9	No idea	-	-	49	96,1
Foods – Veterinary Medicines – Pesticides were taken out of the pharmacy, how did this practice affect pharmacy economies?	Income decreased	16	31.4	Reduced cash sales	16	31.4	Did not affectincome	8	15.7	No idea	11	21.6	51	100
What is the priority for improving pharmacy economies?	Profit rates should be updated	19	37.3	The drug pricede creeshould be updated	15	29.4	Service fee should be increased	7	13.7	Profession should be given	7	13.7	48	94.1
Do you think it is right to sell drugs online?	Wrong	44	86,3	Dangerous	5	3,9	No idea	2	3,9	True	-	-	51	100

N: Number

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