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## Community pharmacists' perspective and professional fulfillment regarding online selling of over-the-counter and prescription drugs during COVID-19 in Metro Manila

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### Abstract

Due to COVID-19 restrictions, purchasing goods and services through the internet has become commonplace. As they begin to develop, buying medication online has become one of the top concerns for public health. This research aims to assess and evaluate the perspective and professional fulfillment of community pharmacists regarding the online selling of OTCs and prescription drugs during COVID-19 in Metro Manila. Self-administered online surveys were used as the primary tool for quantitative data collection to gain information from the respondents based on their knowledge and experiences. The results were gathered and analyzed using descriptive statistics, Fisher test, Chi-square, and R version 4.2.0. to summarize and establish associations between responses. The research concluded that the adaptation of online selling of over-the-counter and prescription drugs during COVID-19 has a significant relationship between the community pharmacist's perspective and professional fulfillment. However, it may cause a disadvantage for purchasing medicines online due to the possibility of counterfeit drugs and utilizing fake prescriptions.

**Keywords:** Lockdowns; Counterfeit drugs; E-Pharmacy; Pharmacy applications

### 1. Introduction

Due to COVID-19 restrictions, online selling of medication has become one of the top concerns of public health as they start to expand. The consumers purchase their medicine online due to its easy access than in a traditional way like going to a physical (pharmacy) store and interacting (face-to-face) with other people [1]. With this, the World Health Organization [WHO] issued guidelines to control the spread of the virus by implementing restrictions commonly referred to as 'lockdowns' [2]. This restriction can help to control the rapid increase in mortality and morbidity rates caused by the COVID-19 pandemic.

During this lockdown situation, people were following work-from-home patterns [3]. Consumers hence did not have the flexibility of buying things they need. Nevertheless, consumers are using the internet to have a self-diagnosis and purchase products to address their health problems. Numerous threats to the consumer's health-safety exist when purchasing online medication without the network of the traditional pharmacy, including the risk of taking unsafe medication [4]. That's why the growing market of online pharmacies must understand the challenges and opportunities and provide all recommended practices to successfully launch a pharmacy e-commerce platform. With this, online pharmacies can provide services that will ensure a safe transaction for consumers.

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According to the Food and Drug Administration [FDA] Advisory No. 154 of 2019 (Internet Sales and Access to Safe Medicine), there are no existing laws and regulations on the online selling of medicines in the Philippines. However, the FDA allows the sellers to have online dispensing services if the seller has an existing FDA-licensed Drug Store with its physical address. The FDA classified the online selling of medicines as additional services of the Pharmacy subject to approval. Moreover, these online pharmacies conduct an online selling of medicines through an application and websites for their consumers as the COVID-19 pandemic started, [4].

As the online selling of medicine becomes popular, there are certain advantages and disadvantages when utilizing it. As advantages of online selling, consumers can avail a suitable choice of online stores (budget-friendly), provide easy access and understanding of medical information, and give convenience when ordering products [5]. While the disadvantages of online selling are that consumers have great chances of drug abuse, lack of interaction with physicians, and possible impure drugs [6]. In line with this research study, the authors assessed and analyzed community pharmacists' perspectives and professional fulfillment regarding the online selling of OTCs and prescription drugs during COVID-19 in Metro Manila.

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## 2. Material and methods

### 2.1. COVID-19

#### 2.1.1. Epidemiology

Wuhan, Hubei Province of China, was the first epicenter of the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) that gives several positive cases of pneumonia with unknown etiology that spread in the provinces of China [7]. The Chinese government said that most positive patients have a history of going to the seafood market, which was suspected to be the specific area where the virus began. The Chinese Center for Disease Control and Prevention (CDC) recognized the first COVID-19 sample from a throat swab on a patient on January 07, 2020 [8]. The WHO gives the name of the virus as 2019nCoV, which eventually became COVID-19 [9]. The coronaviruses are single-stranded positive-sense RNA that causes the patients to have severe types of lower respiratory tract infections resulting in death [10]. The Chinese government decided to impose a level 1 health emergency response to prevent the fast spread of the virus [11]. The virus resulted in 80 270 confirmed cases and 2 981 death cases in mainland China on March 03, 2020

#### 2.1.2. Government Restriction

Due to the alarmingly high levels of spread and severity worldwide, the WHO affirmed the coronavirus disease 2019 as a pandemic [12]. It was challenging for all the government authorities to appropriately respond and control the rapid spread of the virus resulting in a high rate of positive cases. No one was ready, but governments globally must take action properly and efficiently to the threat of the COVID-19 pandemic and impose public health emergency through high restrictions that will “flatten the curve” while waiting for the vaccines to protect the people from the virus [13]. The authorities believe that preventive measures like hand washing, social distancing, mass testing, early isolation, quarantine, and treatment for the virus will limit the spread of active cases during COVID-19 [14]. Aside from that, the government must expect another possible pandemic in the future, which is why it is essential to improve the healthcare facilities, healthcare treatment, preventive protocol and measures, and concrete plans to prevent the recurrence of overwhelming positive COVID-19 cases [15].

#### International

A total of 1 122 policies in 171 countries have implemented external border restrictions since December 31, 2019, when the start of the COVID-19 outbreak [16]. About 1 441 policies in total from 171 countries were implemented concerning the closures of schools. Also implemented 2 638 health-related policies concerning maintaining the supplies of health-related materials and the availability of hospital beds and doctors. Aside from that, 1,833 policies had been implemented to impose restrictions on non-essential businesses. Only 343 policies from health monitoring and 327 health testing were implemented as COVID-19 became a serious 15 problem globally. Active tracking of quarantined people is essential for controlling the COVID-19 pandemic in society [16]. Asian countries like China, Japan, and Korea have several mandatory COVID-19 mobile phone applications to control and monitor the compliance of the public with quarantine protocols and other government restrictions. In Turkey, mobile phone operators instantly alert all quarantined people when violating the quarantine protocol, like going to different places that are not quarantine areas. Indeed, implementing restraining charges from violators improve the compliance of the people to follow the quarantine protocols [14].

## Local

Starting March 13, 2020, implemented community quarantine in the National Capital Region and it was expanded to “ECQ” on the entire island of Luzon on March 16, 2020 [17]. The whole island is under total lockdown, and later on, the major cities, Cebu and Davao also put under ECQ. In August 2020, the COVID-19 cases exceeded 100 000. Different healthcare workers and health organizations pleaded with the government for a “time-out” where the virus spread rapidly, and hospitals became total capacity [18]. Based on the IATF community quarantine restriction, from GCQ to MECQ, people are strictly prohibited from going outside. But it has an exemption for people classified as healthcare professionals, other front-liners, and a family member assigned to purchase essential daily needs together with valid IDs. Drug stores and manufacturing facilities of food and medicines are also allowed to operate from GCQ up to MGCQ to provide for the public during the outbreak of COVID-19 in the Philippines.

## 2.2. Pharmacists' Perspectives

### 2.2.1. Purchase Online Medicine

Over the last decade, the online selling of medication with or without a prescription has been debated in the pharmacy and wider healthcare communities, with many commentators listing the risks and benefits of buying medicines over the counter via the internet [19]. In the Philippines, the online selling of medicines, particularly vitamins and dietary supplements, is common. Typically, some online sellers of such products are unlicensed pharmacists who sell these products at low prices. According to an advisory issued by the FDA, online selling of medicines is not permitted for online sellers without the approved pharmacy-licensed and the drug stores' physical addresses [20].

### Over-the-counter drugs

Over-the-counter medicine, or OTC, is a drug that can purchase without a prescription from a physician [21]. People have been continuously purchasing OTC medicines for many years, especially when they have mild to moderate health problems like pain or cough and colds. The different authorities globally have become alarmed and are investigating the massive increase of consumers purchasing OTC medicines and issues about improper self-diagnosis to address health problems [22]. Due to the side effects and adverse drug reactions of the OTCs to consumers upon taking it incorrectly. Moreover, considering that purchasing over-the counter medicines are more convenient in both online and physical drug stores, consumers believe that drug treatment will always be available for any ailment. However, the FDA issued restrictions on some OTC medicines like pseudoephedrine (Sudafed) and naloxone (Narcan Nasal, Narcan) due to their potential for drug abuse and misuse. These restricted over-the-counter medicines are only available from authorized pharmacies, known as pharmacist-only OTC medications. Pharmacist-only OTC medicines must be obtained only from a licensed pharmacist, with mandatory pharmacist counseling on drug selections and proper drug use.

### Prescription drugs

It always requires a valid prescription from a physician to purchase, but many prescription drugs nowadays are freely available on the internet [23]. Many consumers patronize this type of process because it saves time and money. Moreover, an increasing number of pharmacists and companies are engaging in online pharmacies due to the spread of COVID-19. However, many illegal internet pharmacies sell prescription-only medications online even without a prescription [24]. Drugs are distributed in large amounts, making them readily available for abuse, and counterfeit medicines put users at risk as it is difficult to tell the difference between real and fake drug prescriptions. Aside from that, opioids, stimulants, and sedatives are the most commonly abused prescription medications. Their abuse rates have increased due to the proliferation of unauthorized online pharmacy websites [25].

## 2.3. Pharmacists' Professional Fulfillment

A sense of involvement, reward, and satisfaction with one's employment is defined as professional fulfillment [26]. The growing acknowledgment of professional completion as an essential component of pharmacist well-being broadens the extent of research and assessment activities to cover the design, testing, and application of treatments to improve professional fulfillment and minimize burnout. Aside from that, it needs to examine the internal and extrinsic aspects of pharmacist satisfaction to design appropriate interventions [27]. Community pharmacists in Baghdad, Iraq, have shown medium job satisfaction, with degrees of fulfillment influenced by gender, age, years of experience, employment modalities, and labor hours. Before being incorporated into expanded pharmacy services, new initiatives will demand assistance for Iraqi pharmacists from the Ministry of Health and the Syndicate of Iraqi Pharmacists.

## 2.4. Factors of online purchasing

The COVID-19 pandemic was more than a disaster. It has suddenly altered the entire mode of natural life [28]. It affects the people purchasing everything online: one example of this is the online purchasing of medicines. As a result, providing substitute medicines is a standard practice among pharmacists. Consumers are worried about their health. The availability of drugs over the internet has revolutionized the healthcare industry. Consumers expect home delivery, simple access, online pharmacy reminders, and cost-effective deals. The prescription drug purchases made over the internet are global phenomena with significant economic, social, and health-related implications [29]. The upsurge of internet prescription medicine purchases is considerable. It has occurred hastened by community quarantine caused by the COVID-19, which has left several people unable to get immediate medications, unlike the normal situation without the threat of the virus. Licensed, certified, and reputable retail pharmacies, on the other hand, provide essential and critical services to patients.

### 2.4.1. Awareness

Consumers' awareness pertains to the proper taking of medicines, whether OTC or prescription drugs, which are significant to consumers' health in preventing the occurrence of adverse drug reactions [30]. Consumers should follow medical information given by the healthcare professionals like physicians and pharmacists to practice safety precautions. Moreover, as online selling of medicines became popular during this COVID-19 pandemic. Unregistered online drug stores take the opportunity to sell counterfeit medicines that are more dangerous to the public's safety, and the fast growth of the economy can also be affected [31]. The role of the community pharmacists regarding this crisis is to educate consumers to stop purchasing online medicines from illegitimate and unregistered online drug stores that are possibly the instigator of counterfeit drugs.

### 2.4.2. Accessibility

COVID-19 made it impossible for people worldwide to interact, which significantly influenced pharmaceutical firms since many consumers found it difficult to purchase medicines from actual drug stores during the COVID-19 restrictions [32]. Nowadays, many consumers rely totally on the internet since it is more accessible and convenient. Some consumers believe that online pharmacies are easier with private transactions than physical pharmacies. It shows that social influence through the help of internet connection and online purchasing of medicines became more popular to many consumers during the COVID-19 pandemic. Consumers have control over add-to-cart, place an order, and quickly receive the medication regardless of whether it is over-the-counter or prescription drugs. More consumers are knowledgeable enough about the possible effects of purchasing medicines online. However, even though there are health risks associated with online purchasing of drugs, consumers still engage in this type of buying due to accessibility that will save time, and it can save lives from the threat of the virus.

### 2.4.3. Behavior

As the COVID-19 pandemic affects society, people prefer to purchase everything online. The online purchase of medicine has benefited all [33]. Most consumers prefer to shop online for convenience and to save time. People prefer delivery services rather than going to a physical store and risking their life from the virus. One main reason people purchase medicine online is its lower price than its physical drug stores [34]. During the COVID-19 pandemic, online purchasing of medicine became the top priority of many consumers globally. Consumers are threatened with the virus due to its severe complications that can result in death. Thus, consumers have started to change their behavior in purchasing medicines. Now, consumers depend on online purchasing of treatment rather than going to physical drug stores due to convenience and compliance with the COVID-19 restrictions. However, the possibility of abuse by the seller due to self-interest behavior and counterfeit products purchased online may adversely affect consumers' health, as the products may contain inappropriate drug substances that may cause human intoxication.

## 2.5. The effects of online medicines during the COVID-19 pandemic

As quarantine measures are implemented worldwide, online pharmacies have become popular as most consumers cannot easily purchase medicines outside their houses [4]. It made this proposal to serve as an alternative medium to deliver each service despite the situation. Indeed, it became an excellent combat method to prevent the widespread virus from affecting the lives of individuals. On the contrary, some sellers from unauthorized online drug stores offer medicines without a physician's prescription, and the products are delivered efficiently to unidentified manufacturer addresses worldwide [35]. As a consequence, multiple risks can lead to severe world health-problem. Furthermore, the quality and efficiency of these counterfeit drugs will remain questionable and useless. It cannot add up to improving a patient's faster recovery. In conclusion, patients unaware of this issue may take these medicines; consequently, adverse drug reactions may occur that can lead to a bigger problem.

The researchers used a descriptive quantitative study since they aim to gather numerical data and generalize it to determine the perspective and professional fulfillment of community pharmacists in Metro Manila regarding the online selling of over-the-counter and prescription drugs during the COVID-19 pandemic. A correlational study was also utilized as a statistical measure to determine the relations between community pharmacists' perspectives and professional fulfillment to the online selling of over-the-counter and prescription drugs.

### 3. Results and discussion

The respondents of the study were community pharmacists, both in privately owned and chained pharmacies located in Metro Manila, and mostly 33% are from the City of Manila. 77% of the respondents are female, 76 % are aged 21-30 years old, 96% obtained BS Pharmacy as the highest educational attainment, 48 % have a monthly income of Php 20,001-30,000, 41% of the respondents have been a registered pharmacist for 1-3 years, 66% are working 7-8 hours a day, 50% are working as a community pharmacist for already 1-3 years, and lastly 42 % have not conducted online selling services of medicines but are planning to adapt.

The different online pharmacy applications used by consumers during COVID-19 to purchase over-the-counter and prescription medicines in Metro Manila are presented in Table 1.

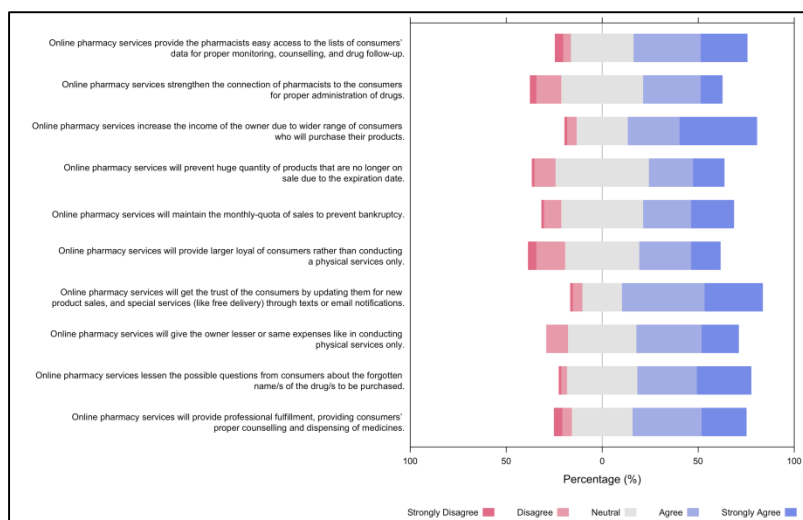
**Table 1** Online Applications Being Utilized

Online Applications	Frequency	Percent (%)
Mercury Drug Gamot Padala	61	28.9
Watsons Online Pharmacy	54	25.6
Southstar Drug Delivery	27	12.8
Generika Drugstore (E-store)	24	11.4
Rose Pharmacy Online	10	4.7
None of the above	6	2.8
Others	22	10.4
Total	211	100.0

Among all the available online pharmacy applications, 28.9% of the respondents used Mercury Drug Gamot Padala, which has the highest percentage of online pharmacy applications utilized by the research participants. Therefore, this only shows that most respondents prefer using and purchasing over-the-counter and prescription medicines in online pharmacy applications from reputable and well-known chain drug stores compared to other privately owned and less well-known drugstore outlets during the COVID-19 pandemic.

Moreover, most community pharmacists believe that many consumers prefer the online selling of medicines because of the fast, safe, and convenient services they can offer during the time of lockdowns compared to visiting a physical drug store that might harm them from the virus. However, some community pharmacists are hesitant to provide online services due to the possibility of dispensing fake and unauthorized prescriptions as well as the self-medication of many consumers during COVID-19.

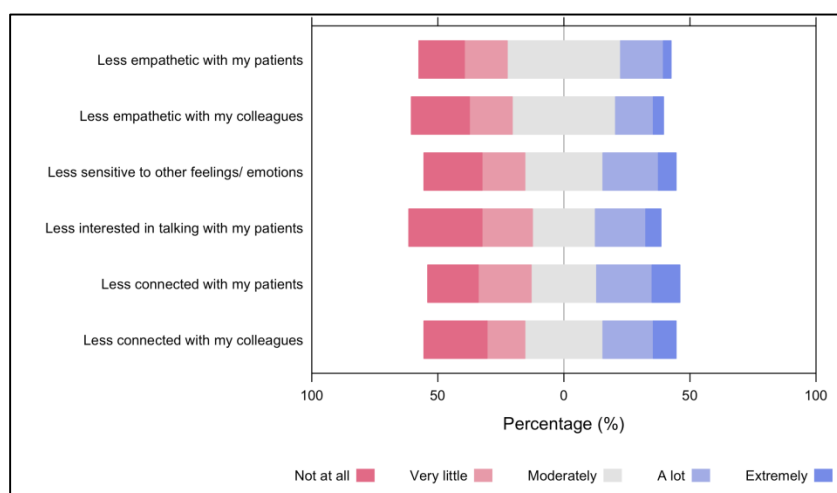
Furthermore, the Community Pharmacists' perspectives regarding the effectiveness and adaptable technique of online selling of medicines during COVID-19 are presented in Figure 1.



**Figure 1** The Effectiveness and Adaptable Technique of Online Selling of Medicines during COVID-19

The respondents agreed that online pharmacy services greatly help pharmacists during COVID-19, especially on the easy access to the lists of consumers' data (35%), provide larger loyalty of consumers (43%) and provide professional fulfillment (36%). The majority of the respondents have neutral to strongly agreeable responses towards online pharmacy services during the COVID-19 pandemic. This could imply that it can be effective and adaptive in community pharmacy practice.

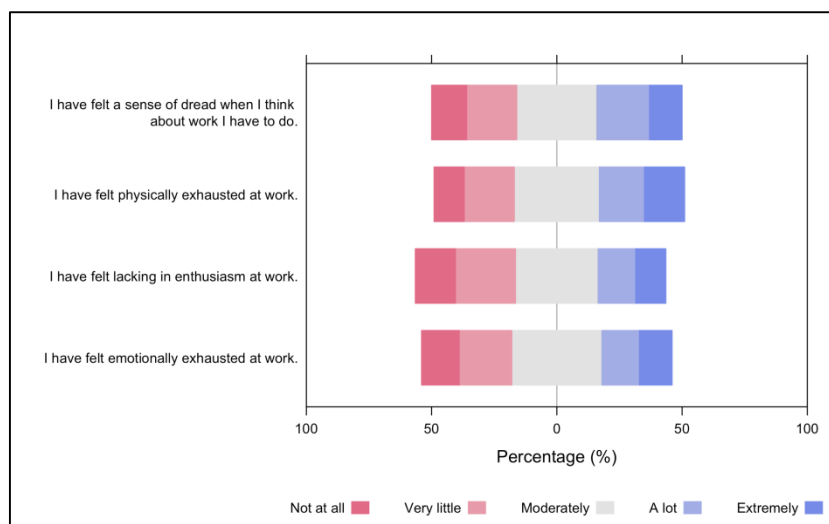
Other than that, the Community Pharmacists' Professional Fulfillment in terms of Online Selling Setup are presented in figure 2 – 4



**Figure 2** The Community Pharmacists' Professional Fulfillment in terms of Online Selling Setup in terms of Interpersonal Disengagement

Most of the results are moderately in terms of 45% of feeling less empathetic to their patients during their engagement with online pharmacy, 41% feeling with colleagues is less emphatic, 31% feeling is less sensitive to other feelings/emotions, 26% less connected with their patients, and around 31% less connected with their colleagues.

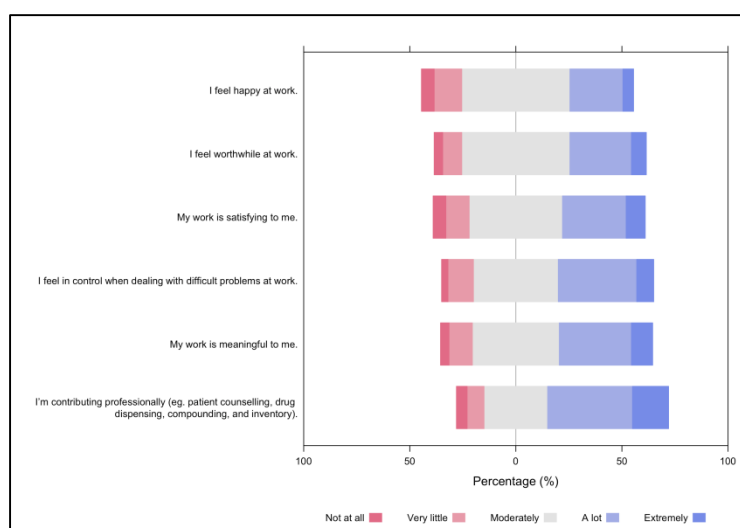
Overall, the online setup job of the community pharmacists has neutral to very little feelings in terms of interpersonal disengagement when working online selling setup. Some community pharmacists are not having a hard time engaging with the patients and with their colleagues in the new setup. Among the many considerations, internet pharmacies are gaining traction as a result of their ability to meet customer demand. Nonetheless, they are jeopardizing "face-to-face" engagement, harming the development of client loyalty based on direct "human" interaction and, as a result reducing pharmacists to merely commercial figures [36].



**Figure 3** The Community Pharmacists' Professional Fulfillment in terms of Online Selling Setup in terms of Work Exhaustion

Most of the results are moderate in terms of 32% felt tense when they thought about work, 34% felt physically exhausted at work, 33% felt lacking in enthusiasm at work, and 36% felt emotionally exhausted at work. Overall, the level of work exhaustion satisfaction is neutral when offering an online setup job.

Pharmacists and other healthcare workers on the frontline of the COVID-19 pandemic have reported enduring significant psychological impacts such as stress, fear, anxiety, and burnout around the world. The rising demands on pharmacists' roles put their psychological and mental health in jeopardy [37]. After nearly a year of working in this high-stress atmosphere, the healthcare workforce is beginning to falter. Burnout is occurring at alarmingly high rates among healthcare personnel [38]. It indicates that there was no change in most community pharmacists' fulfillment in the workplace. Whether they can be part of an online or on-site pharmacy, the level of work exhaustion is still the same.



**Figure 4** The Community Pharmacists' Professional Fulfillment in an Online Setup

Majority of the responses by the community pharmacists are moderate in terms of 51% feeling happy and worthwhile at work, 44% feeling satisfied at work, and 41% feeling that their work is meaningful. Pharmacists' work environment and the amount and type of work performed can influence pharmacists' quality of work-life and their level of work performance [39]. With the results and interpretation obtained, researchers found out that pharmacists are moderate to a lot of content with their work in community pharmacy.

Furthermore, 40% of the respondents answered a lot; contributing professionally (eg. patient counseling, drug dispensing, compounding, and inventory). Community pharmacists are the most accessible healthcare provider, which is further proven during the pandemic as they continued to provide direct patient care and even an online setup [40].

The significance between the perspective and professional fulfillment of community pharmacists on the possible adaptation of online selling services during COVID-19 is presented in table 2 - 3

**Table 2** Community Pharmacists' Perspective on the Possible Factors that Motivate Consumers to Purchase Drugs Online

	x <sup>2</sup>	P value	Interpretation
1. The consumers find that the drugs are more affordable and have discount offers on online platforms.	19.844	0.2114	Not Significant
2. The consumers find unavailability of medicines in local drug stores.	11.327	0.7811	Not Significant
3. The consumers find that it reduces visits to actual drug stores and healthcare professionals	25.579	0.0740	Not Significant
4. The consumers find easy online access from home at any time, to consult drug information from an online pharmacists	28.999	0.0535	Not Significant
5. The pharmacist provides strict privacy in terms of personal information about the consumers when purchasing medicines online		0.1729 <sup>a</sup>	Not Significant
6. The pharmacist provides more information on the products from online sites (application) compared to actual pharmacy setup	21.96	0.1399	Not Significant
7. Online pharmacies can provide larger quantity of items to consumers compared to actual community pharmacies	15.207	0.5232	Not Significant
8. Online pharmacy can provide good product quality than actual pharmacies	7.8132	0.9555	Not Significant
9. Online pharmacies provides e-prescriptions that are not hassle to consumers to always bring it when purchasing medicines	11.625	0.7176	Not Significant
10. The services offered in online pharmacies are much better than the physical pharmacies	43.65	0.0025	Significant

<sup>a</sup>Fisher test is used rather than Chi-square test

It showed the low relationship between the perspectives of community pharmacists on the possible adaptation of online selling services during COVID-19. According to the findings, there was only one significant factor. Services provided by online pharmacies have a substantial correlation with the motivation of users to purchase drugs online since the p-value calculated was less than (0.05).

It means that developing will guarantee a clear set of marketing strategies emphasizing the most commonly preferred services of online pharmacies and in terms of the study's results, it was clear that the better the services provided by online pharmacies, the more satisfied customers are willing to purchase drugs online.

**Table 3** Community Pharmacists' Perspective regarding Online Selling of Medicines as an Effective and Adaptable Technique of Practice during COVID-19

	x <sup>2</sup>	P value	Interpretation
1. Online pharmacy services provide the pharmacists easy access to the lists of consumers' data for proper monitoring, counseling, and drug follow-up.	52.166	0.0025	Significant
2. Online pharmacy services strengthen the connection of pharmacists to the consumers for proper administration of drugs	29.402	0.0405	Significant



3. Online pharmacy services increase the income of the owner due to wider range of consumers who will purchase their products	13.655	0.5512	Not Significant
4. Online pharmacy services will prevent huge quantity of products that are no longer on sale due to the expiration date	22.192	0.1449	Not Significant
5. Online pharmacy services will maintain the monthly-quota of sales to prevent bankruptcy.	30.557	0.0365	Significant
6. Online pharmacy services will provide larger loyalty of consumers rather than conducting a physical services only	34.747	0.0085	Significant
7. Online pharmacy services will get the trust of the consumers by updating them for new product sales, and special services (like free delivery) through texts or email notifications.	73.101	0.0005	Significant
8. Online pharmacy services will give the owner lesser or same expenses like in conducting physical services only.		0.0005 <sup>a</sup>	Significant
9. Online pharmacy services lessen the possible questions from consumers about the forgotten name/s of the drug/s to be purchased.	25.573	0.1054	Not Significant
10. Online pharmacy services will provide professional fulfillment, providing consumers' proper counselling and dispensing of medicines	40.123	0.0080	Significant

<sup>a</sup>Fisher test is used rather than Chi-square test

Significant perspectives are contributing to the effectiveness and adaptability of the online selling setup to the Community pharmacist during COVID-19. This may be due to easy access, strengthened connection, sales, loyalty, trust, lesser or same expenses, and professional fulfillment that motivates the community pharmacists to grasp the undeniable expansion of the pharmacy services here in our country.

In addition, online pharmacies serve as complementary solutions to improve information sharing and data collection and are designed to overcome existing barriers for adaption and implementation [41]. This statement justified the result presented entailing the response provided by the community pharmacist residing in Metro Manila that online selling of medicines is much more effective compared to the traditional way of transaction, which is direct purchase in local pharmacies. This implicates the adaptability and effectiveness of online selling practice amidst the current situation. As a result, the professional fulfillment of the community pharmacist expands in a wider perspective which serves as an outlet to strengthen the service provided in this profession and to overcome the barriers that emerged due to the COVID-19 pandemic.

Additionally, there is a significant relationship between the factors that influence the consumers to purchase medicine from the internet and the demographic profiles from the community pharmacists' fulfillment. It showed that affordability and convenience influence the consumers from purchasing medications online than in actual pharmacies.

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#### 4. Conclusion

Researchers concluded that there is a significant change in community pharmacists' perspectives and professional fulfillment regarding selling over-the-counter and prescription medicines online. The researchers sought that community pharmacists' perspectives and professional fulfillment could be improved by addressing the importance of online pharmacy services and adding more employees who will assist patients with medical prescriptions. To sum it up, although the online selling of medicines has had a positive and significant effect on community pharmacists' perspectives and professional fulfillment during COVID-19, these implications will significantly help improve online pharmacy services further.

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#### Compliance with ethical standards

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*Disclosure of conflict of interest*

No conflict of interest.

*Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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