Challenges, Adaptive Measures, and Opportunities of Community Pharmacy Practice in the Philippines during the COVID-19 Pandemic

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ABSTRACT

Background. Community pharmacists play a strategic and indispensable role as healthcare professionals with direct patient access during the COVID-19 pandemic. Nevertheless, there had been no studies that document the challenges, adaptive measures, and opportunities of community pharmacy practice in the country during such period.

Objectives. This study aimed to describe the challenges encountered and adaptive measures implemented by community pharmacies, and to explore opportunities of community pharmacy practice brought about by the COVID-19 pandemic in the Philippines.

Methods. The study employed a qualitative, cross-sectional study design. Convenience sampling was conducted representative of chain and independent drug stores, online and other stores with service variations, and pharmacy organizations. Recruitment was pursued until data saturation with a total of 16 participants. Interviews were transcribed and analyzed through thematic analysis using NVivo 12. The study received ethical clearance for implementation from the UP Manila Research Ethics Board.

Results. Results showed there were various challenges that affected both the supply- and demand- side of pharmacy operations in the community pharmacy practice during the pandemic. Due to the adaptive role of the pharmacy profession during the pandemic, there has been an increased relevance of pharmacists in public health. Furthermore, the pandemic has exhibited the need to shift to the use of e-prescriptions. However, there are limitations to its current use, such as ensuring the validity of the prescription when presented in a pharmacy.

Conclusion. There are several challenges encountered by community pharmacists during the pandemic. These challenges led to several adaptive measures being implemented that also became an opportunity to emphasize the vital role community pharmacists play in the healthcare system.

Keywords: community pharmacy practice, COVID-19 pandemic

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INTRODUCTION

The coronavirus disease (COVID-19) has become a pandemic that causes significant burden to patients globally. Particularly, the community pharmacy population is at a higher risk of infection. Community pharmacists have been involved in responding to this pandemic, whose roles generally covered addressing potential issues on accessibility to medicines and proper medication use. As the global threat of COVID-19 continues to spread, it is critical to determine how community pharmacists have lived and provided services to patients.

COVID-19 and Community Pharmacists

The COVID-19 pandemic has posed a serious threat to the health of the community patient population. Community transmission of the disease entails high risk of infection where patients are facing the potential failure of medications.[1] Due to this phenomenon, community pharmacies have the essential task to provide a strong support of patients' medication and personal protective equipment (PPE) supply. Together with this, pharmacists are expected to provide effective pharmacy services and health information related to COVID-19 to ensure medication safety and promote overall pandemic control.[2,3] The ease of access and availability of community pharmacies as first point of contact also places pharmacists as frontline healthcare providers in the early detection, referral, and facilitation of various treatment and preventive measures to slow the spread of the disease.[4]

However, in developing countries where services in community pharmacy practice have not fully expanded, the additional role of pharmacists to assist in COVID-19 containment at various levels of the community has been limited. A study by Atif and Malik described their experience in Pakistan to be surmounted by interrelated factors of the government, public, academic curricula, and drug retailer which refrains the community pharmacists in performing and facilitating the country's COVID-19 response.[5] Gaps with regard to the integration of pharmacists into public health and safety initiatives also exist which hampers expansion of services for emergency preparedness and response, and to further improve pharmacy operations management.[6]

Challenges Encountered by Community Pharmacists

COVID-19 pandemic provoked a general feeling of wariness and uncertainty, especially among healthcare workers, which, as studied by El-Hage et al., is attributed to the fast spread of the virus, the severity of symptoms in infected individuals, the lack of information on the disease, and deaths among healthcare workers.[7] Organizational factors that can also cause stress are depletion of PPEs, concerns of not being able to provide competent and holistic care if deployed in different areas, rapidly changing information, lack of access to up-to-date information, shortage of specific drugs, ventilators and intensive care unit beds, and significant changes in daily social and family life. Furthermore, factors such as feelings of being inadequately supported, concerns on self-health, fear of infecting family members, lack of rapid access to testing through occupational health, being isolated, uncertainties and social stigmatization, and overwhelming workload have also been identified. Due to these, literature has cited that healthcare workers are at an increased risk of high levels of stress, anxiety, depression, burnout, addiction, and post-traumatic stress disorder, which may have long-term psychological implications.[8,9]

Harassment, stigmatization, and physical violence associated with COVID-19 poses a real threat to the lives of healthcare workers who have experienced avoidance of their family and community due to fear. There has been increasing healthcare worker population support, but individual stigmatization is still widespread in many countries. A study by Bagcchi narrates that healthcare workers in India have become a natural target of society which has caused them to suffer mental stress. Many faced social isolation mainly attributed to unscientific belief and misunderstanding of the people. Further, in more developed countries, healthcare workers are stigmatized and harassed at public places as they were perceived as having a higher risk of transmission.[10]

Taking things into perspective, pharmacists have been overlooked as healthcare workers in the frontline, thus it is important to know the detrimental effects to mental health that pharmacists have experienced due to the COVID-19 pandemic. According to Elbeddini et al. (2020), during the pandemic, pharmacists have experienced an increase in the number of patients seen, the screening and triage done, COVID-19 information delivered, medication shortages, and workplace harassment.[11]

The additional burden of being the first point of contact for patients who have non-COVID-19-related diseases who are hesitant to go to the hospital has also taken a toll for community pharmacists who attempt to fill a clinical role.[12] Further, engaging in patient triage for patients with increased risk of COVID-19 has demonstrated the importance of continuity of care during the pandemic which can exist in different point-of-contact, over the phone or in-person screening.[13] These additional roles contribute to the burden community pharmacists face in their everyday lives during the pandemic which has increased their chances of infection and contamination.

Adaptive Measures Implemented

COVID-19 pandemic has imposed unprecedented challenges to the community pharmacy practice. Nevertheless, there has been growing evidence that showed the adaptability and resilience of community pharmacists during this pandemic. A study by Gregory and Austin described how community pharmacists adapted and responded during the pandemic.[14] Key findings included the collapse of provision of non-dispensing services, the central role of managerial decisions (e.g., decreased shift length, scheduled patterns, reduction of multi-tasking), and the role of technology in supporting continuity of quality pharmacy services. Another study determined factors that may influence or predict resiliency of individual practitioners and their workplaces. Key findings were: a) use of and comfort with technology; b) early adoption of corporate and professional guidance; c) workplaces that emphasized task-focus rather than multi-tasking; d) scheduling methods and practices for personal resilience; e) dedicated specialty staff which allowed pharmacists to focus on their work; and f) provision of PPE.[15]

Other adaptive measures found include the use of protective devices, establishment of preventive and sanitation

measures, and implementation of services for customers such as booking of prescriptions, home delivery services, and phone consultations.[16] A study by Cadogan and Hughes summarized the key roles and activities of community pharmacists on prevention, preparedness, response, and recovery during the COVID-19 pandemic. These include providing information on the disease, infection control, maintaining continuity of pharmacy services, active surveillance, and ensuring adequate medication and PPE supply, among others.[17-19] Additional responsibilities that can be undertaken by community pharmacists relating to public health response to help alleviate pressure on general practice and other areas of health service were also highlighted. These included: (1) managing minor ailments, (2) extended prescribing roles, (3) balancing supply and demand of drugs, and (4) promoting continued medication adherence.

There has been emphasis on the contribution of community pharmacists in managing chronic diseases and promoting medication adherence as key to easing the burden on health systems while other healthcare personnel battle COVID-19. It also enumerates the role of community pharmacists during the pandemic such as: (1) information and communication about COVID-19, (2) triaging at community level for COVID-19 suspects, (3) ensuring availability of chronic disease medication, (4) supporting rational medication use, (5) promoting medication adherence, and (6) medication review and follow up.[20]

Bragazzi et al. listed the expanded roles of community pharmacists in the management of COVID-19, and post-COVID-19 world. These include educating patients on COVID-19, ensuring a stable supply of medications and sanitation products, serving as an information hub for updated information, promoting and enhancing public and global health, and contributing to immunization campaigns.[21]

As for the quality of services currently being provided in the context of the pandemic, more studies are being published documenting that patients and customers have been satisfied with the enhancement and improvement of pharmacy services, particularly on tele-pharmacy and tele-health consulting.[22-24]

Innovative Solutions

Notably, community pharmacists have been subsequently attempting to navigate a rapidly changing environment by taking advantage of opportunities as they arise and developing innovative solutions while mitigating many threats that could affect their professional and personal lives.

COVID-19 has highlighted the potential role of digital medicine to improve healthcare, cut distances and bring people closer, minimizing physical contact and easing some forms of bureaucracy that slowed down the healthcare processes. Pharmacy services could be enhanced by digital technologies such as tele-pharmacy and tele-health consulting.[22,24,26]

A study by Inch et al. reported that community pharmacy services delivered remotely using tele-technology are feasible and acceptable. It also emphasized the potential of using technology to reduce health inequalities in rural communities.[26] Strengthening this claim, Como et al. suggested that services which integrate tele-health with visual and telephone medication therapy management sessions led by community pharmacists should be provided and delivered to improve health outcomes of patients during the pandemic.[27]

Pharmacists video-based consultation, combined with home drug delivery or mail-order pharmacy (MOP), can help hospital outpatients with difficulty accessing treatment without the repercussions on therapeutic objectives while saving direct costs for the patient and indirect costs in terms of labor productivity.[28-30] Medication delivery service could provide multiple benefits to patients during home quarantine. It enabled the provision of drugs to patients through a service that was free for both the patient and the hospital pharmacy service.[29]

Systems for home delivery was established by linking the existing dispending unit system with the emerging approach to community-oriented primary care in the area.[30] Medications were delivered to primary care pharmacies, and a variety of methods were used to distribute the parcels to local non-profit organizations where they could be delivered by a group of community health workers. Various ways of delivering parcels includes Uber, bicycles, and electric scooters, as well as Google forms to monitor the success of the initiative. This may prevent COVID-19 among people with comorbidities who are at risk of more severe diseases. It may also decongest primary care facilities ahead of the expected surge in COVID-19 cases.

Community pharmacy-based approach to the distribution of face masks to populations represented a new and innovative engagement of pharmacists in public health promotion and protection initiatives. However, community pharmacies can greatly improve the efficiency, reliability, and cost-saving of the distribution of public health resources to local communities, especially in the face of an epidemic.[31] Collaboration between an academic institution and local pharmaceutical committees to develop a quality improvement (QI) module aimed to upskill community pharmacists in QI methods. A collaborative approach could better equip pharmacists and help them acquire skills to accommodate new working practices during the pandemic.[32]

Thus, there have been important legal extensions to the role of pharmacists in light of the COVID-19 global pandemic. These included: (1) authorization to prepare hand and surface disinfectants, (2) eligibility to renew chronic treatment prescriptions, (3) vaccine administration, (4) virtual medical consultations, e-prescriptions, and home drug delivery, and (5) alternative sourcing, strength, generic, or therapeutic substitution, and preparing compounded formulations at the pharmacy.[33]

Many studies have been conducted on the challenges, adapted measures, and opportunities of community pharmacy practice in other countries, however, there is currently no study that described the lived experiences of community

pharmacy practice in the Philippines which was engulfed with numerous changes during the pandemic. This study aimed to describe the challenges encountered and adaptive measures implemented by community pharmacies, and to explore opportunities of community pharmacy practice brought about by the COVID-19 pandemic in the Philippines.

MATERIALS AND METHODS

Study Design

This study employed a qualitative, cross-sectional study design using purposive sampling. Data collection was performed through focus group discussions (FGD), key informant interviews (KII), and documentary review of existing government regulations for triangulation. The data were derived from pharmacists and administrators of community pharmacies who were sampled and willing to participate in the study. This study utilized a semi-structured interview guide as its data collection tool to be used for focus group discussions and key informant interviews.

Study Population

The study population were pharmacists and administrators who had been working in community pharmacy settings. These included the following: (1) chain drug stores, (2) independent drug stores, (3) online and other stores that provide service variations, and (4) people who are working in professional pharmacy organizations that have relevance to the community pharmacy settings.

Sampling Design and Recruitment

This study employed a non-probability, purposive sampling design, which aimed to include relevant stakeholders (e.g., pharmacists and administrators) who have been working in the community pharmacy settings. The sample recruitment was pursued and continued until theme redundancy or saturation, or if the data collection no longer provided any additional information based on the set research objectives (i.e., data saturation). Still, the researchers collected data from representatives of chain drug stores, independent drug stores, online and other stores with service variations, and pharmacy organizations.

Purposive sampling was used for both pharmacist and pharmacy administrator study participants with the breakdown found in Table 1.

A letter was initially sent to all potential respondents through email. Those who had agreed to participate in the study were contacted further for preparation for the focus group discussion or key informant interview. Before the actual discussion or interview, each respondent was given a written informed consent form. Due to the confidential nature of the information which may be revealed, emphasis was placed on reassuring each respondent that anonymity was guaranteed. During the discussion or interview, respondents were anonymized by assigning a non-personal identifier. Follow-up electronic mails were also sent to determine whether respondents had received the questionnaires, and to encourage non-respondents to reply and possibly invite again to participate in the study.

Table 1. Summary List of Respondents

	Pharmacist	Pharmacy Administrator
Chain drugstores	5	3
Independent drugstores	5	2
Pharmacy organizations	0	1

Inclusion Criteria

All relevant stakeholders were considered and included in the study. They shall be: (1) at least 18 years old; (2) with no cognitive impairment; and (3) practicing or working in community pharmacy settings. Notably, these relevant stakeholders included: (1) chain drug stores, (2) independent drug stores, (3) online and other stores that provide service variations, and (4) people who are working in professional pharmacy organizations that have relevance to the community and institutional pharmacy settings.

Exclusion and Withdrawal Criteria

All relevant stakeholders who did not agree to participate or provide an informed consent were excluded from the study. Those who decided not to participate anymore in the study after agreeing were withdrawn from the study. The interview output of those who withdrew from the study were not analyzed further.

Study Site

The study was conducted through an online interview using Zoom as the video conferencing platform with an open-ended interview guide. Sessions in Zoom were recorded, and respondents were requested to turn on their video during the interview.

Study Plan

Data collection was conducted for six months between June 2021 and November 2021. The primary communication method with the identified respondent was through electronic mail which contained the overview of the study, introduction of the researchers, invitation to participate in the study, and the institutional review board approval to conduct the study. Researchers were trained in conducting a focus group discussion or key informant interview to ensure uniformity of data being collected across different schedules.

The process of communication prior to the scheduled interview (e.g., FGD, KII) was as follows: overview of the study and schedule to conduct the interview; two follow-up emails sent in one-week intervals to ensure respondents were adequately informed of the intent to conduct the interview. Upon approval of the interviewee to join the study, an informed

consent form, Zoom link to the FGD/KII, request form for load compensation, and a copy of the interview guide were sent. Agreement to the informed consent could be provided in two ways: affixing an e-signature to the informed consent form or providing an email approval by the interviewee. The name, date, and time of the approval of the informed consent were documented by the researchers. The respondents shall be notified a day prior to the scheduled interview as a reminder.

During the conduct of the interviews, an open-ended semi-structured interview guide was used. The estimated durations of the FGD and KII were 2 hours and 1 hour, respectively. The interviews, for which approval for recording would be obtained, were translated to English and transcribed. Further, written notes were taken during interviews for which recording would not be permitted by the respondents.

Instrumentation

The study used two interview schedules which was used for administrators and for registered pharmacists. The interview guide for administrators are as follows:

1. What is your role in your community pharmacy? How many employees do you have and what are their roles before the pandemic?
2. What is the impact of the COVID-19 pandemic on the implementation of community pharmacy services provided by your institution/pharmacy?
3. What changes have been made to comply with government regulations during the community quarantine?
4. What solutions or innovations have been implemented to provide patient access to community pharmacy services?
5. What support by internal and external stakeholders should be essentially provided to community pharmacies and its personnel?
6. What are the perceived opportunities for community pharmacies brought about by the COVID-19 pandemic?

The interview guide for registered pharmacists also contains six questions:

1. What was your role as pharmacist in the community pharmacy before the pandemic?
2. What is the impact of the COVID-19 pandemic on the implementation of community pharmacy services provided by your pharmacy?
3. What was your experience with the changes in your practice made to comply with government regulations during the community quarantine?
4. What solutions or innovations have been implemented to provide patient access to community pharmacy services?
5. What support by internal and external stakeholders should be essentially provided to community pharmacies and its personnel?
6. What are the perceived opportunities for community pharmacies brought about by the COVID-19 pandemic?

Data Analysis

An inductive thematic or content analysis was undertaken. Audio-recorded discussions and interviews were listened to and transcribed verbatim. All completely transcribed discussions and interviews were encoded in Microsoft Word version 16.0, which were checked by the researchers. To guarantee the adequacy of interpretation, recordings were listened to and read repeatedly before and after initial transcribing to ascertain whether all responses had been captured correctly. To minimize data loss and errors, all transcripts, field notes and audiotaped recordings were reviewed to ensure that all data had been captured appropriately and to cross-check for any omissions or additions during transcription. The transcripts were transferred into NVivo software version 12 for storage, organization, searching, and coding. Coding and further analysis, as well as identifying emerging themes, were undertaken according to study objectives. Notably, all findings from the study were triangulated with a thorough documentary review.

Ethical Clearance

The study proposal was submitted to the UP Manila Research Ethics Board for ethical clearance prior to implementation and was approved with the code: UPMREB 2021-0317-01.

RESULTS

Five pharmacists each from chain and independent pharmacies joined the focus group discussion, while three pharmacists from independent pharmacies, two from chain pharmacies, and one representative from a pharmacy organization participated in key informant interviews. A total of 16 stakeholders were interviewed in the study.

Challenges Encountered

Transportation of both the pharmacy staff and pharmacy goods, such as medicines and personal protective equipment, were common due to community quarantine restrictions. Participants reported that pharmacists and pharmacy assistants experienced difficulties in arriving to their workplace due to limitations in public transportation. The same inter-city restrictions for essential goods were put in place for workers which made it difficult for pharmacists and pharmacy assistants to cross city boundaries, especially since pharmacists, notably those working in community pharmacies, were not recognized as frontline workers in many local government units. A regular challenge encountered from both chain and independent pharmacies is the difficulty in securing stock due to lockdown restrictions implemented. This was due to the difficulty to procure stocks from

distributors, with some reaching up to three months before receipt, and the difficulty to apply for permits for cross-city travel, which included the transport of essential goods, such as medicines, to be delivered to pharmacies. A participant narrates:

> *"…that time kailangan pa po mag-secure ng permits from [the local government] dahil yung stocks po namin galing Taguig, Parañaque. Kahit nakapag order na po kami sa main office, ang problema naman po doon ay saan ang source ng stock galing sa main office." (…during that time, we had to secure permits from the local government because our stocks come from Taguig or Parañaque. Even when we already placed our order from the main office, their problem is where they would source their stocks.)*

Another workplace hazard identified during the pandemic was the categorization of community pharmacists in the vaccine rollout of the government. Community pharmacists had to talk to the local government for them to be categorized as A1 or workers in frontline health services in the vaccine prioritization framework to be classified accordingly, compared to hospital pharmacists who were directly categorized as A1 because they were working in the hospital.

> *"Nakipagusap po kami sa [local] government namin, sa CHO (City Health Office) na dapat kami rin po ay ma-classify as A1. Tayo as community pharmacists ay directly nagseserve sa public so kung tutuusin kami mas malaki ang risk na mainfect kasi hindi po natin alam kung sino na ang mga infected, kung sino yung mga may sakit kaya mataas talaga ang risk dito sa labas kaysa sa loob ng ospital." (We talked to our local government and to our City Health Office that we should be classified as A1 workers. Community pharmacists directly serve the public so actually we are at a higher risk of infection because we don't know who is infected or who already has a disease so there really is a higher risk here outside than in hospitals.)*

Pharmacists were increasingly anxious to face patients when they mention their symptoms, with some being suspect COVID-19 cases. Some patients also refuse to wear face masks when inside the pharmacy. Furthermore, due to the implementation of a skeletal workforce, there were fewer counters that can cater the patients and it was sometimes difficult to hear patients and give advice because of acrylic barriers.

> *"Dati apat pwede namin ipagsabay na i-dispense na orders but because of social distancing, naka-face mask at may plastic barrier, tig-dalawa lang pwede namin i-serve so ang naging impact nun ay limited lang ang pasyente na pwede namin pagserbisyohan." (Before we can dispense orders four at a time but because of social distancing, wearing of face masks and the use of plastic barriers, we can only serve two patients at a time. Because of this, we can only serve a limited number of patients.)*

A participant mentioned that due to the implementation of social distancing and the gradual increase of foot traffic in the pharmacy, the patient-pharmacist interactions were shortened which led to decreased instances of providing medication counseling. Limited community pharmacy services, such as medication counseling, blood pressure and fasting blood sugar monitoring, and anthropometric measurement have also been observed.

> *"May mga services rin po kami that we opted to limit. For example, yung blood glucose monitoring – kung dati po nakakagawa ako ng 10 to 12 in a day sa umaga palang, ngayon po nilimit nalang po namin siya to two to three para iwas rin po sa exposure." (We also have services that we opted to limit. For example, for blood glucose monitoring – before we can perform 10 to 12 everyday in the morning. Now we limited testing to two to three to avoid exposure.)*

A shift in the clients' purchasing behavior was also observed: pre-pandemic pediatric and adult antibiotics were fast-moving items and became slow-moving during the pandemic, while cough and cold medicines, vitamins, and personal protective items (e.g., alcohol, face masks, face shields) were fast-moving due to increased demand, with occasional shortages during spikes of COVID-19 cases in the community. According to a participant, people tend to bulk buy some medicines in fear of not having stocks available in the pharmacy when the patients need them.

Patient preference to visit pharmacies instead of primary care clinics or hospitals for symptomatic relief also made pharmacy staff more vulnerable to the risk of exposure to the virus. Patients feared being diagnosed of COVID-19 infection due to possible stigma in their families and community. Due to this, some pharmacy staff became more wary of facing patients, especially those who were exhibiting COVID-19 symptoms.

> *"…although practice rin naman kasi ng mga Pilipino even before na hindi pumupunta sa doktor unless sobrang lala na or hindi na nila matiis yung nararamdaman nila. Mas napapansin yung ganyang practice ngayon, ayaw talaga nila. Takot talaga silang magpunta sa clinic kasi baka, ang sasabihin nila, maraming nagkukwento na customer, baka isipin nila COVID ito, ganon." (…although it has been a common practice of Filipinos not to visit the doctor unless they cannot control their disease anymore, even before the pandemic, this practice is more visible now. They are afraid to visit the clinic because, according to customers, people might think that they have COVID.)*

In a regulatory perspective, electronic prescriptions (e-prescriptions) were introduced by the Philippine Food and Drug Administration (FDA) to augment the problem of patients not being able to consult their physicians face-to-face to limit their possible exposure to the virus. These e-prescriptions were sent by the physician to the patient through an online messaging application or through email. However, the lack of dispensing guidelines made the use of e-prescriptions prone to abuse. Participants expressed their concern on how these prescriptions can be faked through photo editing software which can lead to additional work for pharmacists in carefully validating these prescriptions. Due to lack of regulation, patients are also able to reuse a fully filled prescription to buy the medicines again in another pharmacy as there is no means to verify if the prescription has already been filled.

The same as patients are not able to visit their doctors, many also have a difficulty to visit pharmacies; this raised another regulatory concern of providing new services to community pharmacies such as online and delivery services. Many pharmacies adapted operating procedures for delivery services which reduced overcrowding in the physical pharmacy and provided financial benefits to the business where patients cannot frequently visit due to limited time outside their homes. However, additional FDA requirements to apply for variations in pharmacy services led to the failure of some pre-ordering and delivery services to be implemented.

Pharmacies which failed to adapt to challenges brought by the COVID-19 pandemic, especially small and independent pharmacies, had to temporarily close due to higher operational costs compared to income as there was slower foot traffic, less patients to serve, additional government requirements to operate based on community quarantine guidelines, and provision of benefits to employees.

Adaptive Measures

Pharmacies strictly observed national and local government regulations during the COVID-19 pandemic. Pharmacists mentioned that there was a need to adapt to the changes in government regulations to their pharmacy operations to continue providing their services.

> *"…natuwa naman po yung may-ari [ng botika] dahil may own initiative [ang staff] na sundin natin ang health protocol kasi kung hindi po tayo gagawa ng paraan to live with it [pandemic] ay hindi ma-li-live up ang name ng pharmacy na mag-offer sa community ng services na kailangan po nila." (…the pharmacy owner was happy that the pharmacy staff had our own initiative to follow the health protocol because if we do not adapt and live with the changes of the pandemic, we cannot live up to the name of the pharmacy to offer services that the community needs.)*

The lack of public transportation shifted the operations of pharmacies to rotational shifting with varied number of pharmacy staff on duty depending on the size of the pharmacy. This administrative decision was also supported by the need to reduce the number of staff to reduce transmission. According to a participant, implementation of rotational shifting means that there are only 1-2 personnel on duty at a time which encouraged social distancing in the pharmacy. To protect employees and follow health protocols, using personal protective equipment was mandatory, while acrylic barriers, or other alternatives, were installed in areas where there is active interaction with patients and customers such as the cash teller, dispensing area, and counseling area.

Problems relating to the receipt of medicine stocks prompted pharmacists to look for suppliers within their city for faster delivery. This was also allowed by some chain drugstores for faster replenishment of stocks.

As telemedicine consultations became the norm to conduct their patient consultations, pharmacy services also changed to reduce foot traffic inside the establishment. Pharmacies were able to expand to pick up and delivery services by implementing online and telephone ordering systems where patients can place their orders in advance before dropping by the pharmacy or having the medicines delivered to their provided address. Different forms of telepharmacy services were also introduced to patients to provide counseling and answering queries through phone calls or online messages for pharmacists to continue providing medication-related advice. This was greatly utilized by chain pharmacies with websites which introduced the use of chatbots for patients and other customers to communicate with the establishment.

Pharmacists encouraged patients, especially special populations such as senior citizens, to stay at home and procure their own devices for symptom monitoring such as blood glucose monitoring devices. They are then educated on the proper use of these devices or asked to call the pharmacy for assistance when doing the procedure at home. As there was a shift in the purchasing behavior of clients from prescription medicines to vitamins and food supplements, patient education was widely provided to inform patients of the importance of the correct intake of maintenance medicines aside from taking vitamins and food supplements. There was also an effort to correct the information patients learn from the media, such as the television and radio, regarding the use of vitamins and food supplements to ensure that patients still take their prescribed medications.

> *"Marami akong patients na nagugulat ka nalang na yung binili niya last time good for one month na metformin tapos ngayon dapat ubos na based sa patient medication profile na meron ako sa kanya. Yung problema ay they tend to stop their maintenance kasi yun ang naririnig nila sa radio station na mas makakatulong ang food supplement [sa kanilang sakit]. May food supplement pa na ang inaadvertise ay nakakapagpagaling daw ng COVID, napaka-misleading. Pero ang problema ko talaga ay tumitigil sila*

[mga pasyente] uminom ng maintenance at nagshishift sila to food supplements. Mas pinapaniwalaan pa kasi ang [radio] announcer kaysa sa mga pharmacists kaya tinatry ko talaga i-explain ng maayos para maintindihan ng pasyente na dapat iniinom niya ng tama ang maintenance niya." (I have many patients that buy metformin good for one month and run out already based on their patient medication profile, but the problem is they tend to stop taking their maintenance medicine because they hear from the radio station that food supplements are helpful for their illness. There is a food supplement being advertised that it can cure COVID-19 which is very misleading. My problem really is patients stop taking their maintenance medicine and shift to food supplements. They believe the radio announcer more than pharmacists that why I try my best to explain properly so that patients understand that they need to take their maintenance medicines properly.)

With the effort to try to properly use e-prescriptions, pharmacies offered to print them for patients, or ask patients to have a physical copy to simulate the traditional prescription where the pharmacist can verify partially filled and fully filled prescriptions. Further, for antibiotic prescriptions, patients were encouraged to have them fully filled. Practices to implement stricter systems on the use of e-prescriptions was also explored. For example, in one area, pharmacists partnered with a local government unit to ensure that e-prescriptions can be verified through a text message. Pharmacy-to-pharmacy coordination in a locality was also done to help patients fill their prescriptions.

Due to the lack of healthcare workers, pharmacists were tapped to become adult vaccinators. A pharmacist immunizer training was seasonally conducted by the national pharmacy organization to train pharmacists to become immunizers and prepare community pharmacists to become vaccination sites.

Opportunities

The role of the pharmacist as a health service provider has been increasingly recognized during the pandemic. Participants mentioned that patients visited pharmacies more frequently due to their aversion to visiting a clinic or hospital, which became an opportunity to promote the pharmacy profession in providing over-the-counter remedies and health-related advice to patients. As the pandemic also paved the way to accelerate the training and certification of immunizing pharmacists in the Philippines, community pharmacies became vaccination sites for COVID-19 vaccination and provided an avenue to provide patient education on common misconceptions about vaccines.

The pandemic also provided an opportunity to build informal referral systems between the different community pharmacies, and these pharmacies with nearby hospitals. Doctors informally refer patients to a pharmacy, while a pharmacy also provides referral to doctors depending on the patient's condition. These practices hopefully encourage collaborative practice in the future which pharmacists are open to implementing.

"Collaborative practice kailangan talaga kasi kung titingnan mo ang buhay ng pasyente, hindi lang naman gamot ang kailangan niya. Kaya pag nag-eexplain ang doctor at nandoon ako ay nakikinig rin ako para kung paano niya ineexplain sa pasyente ay nirereinforce ko rin para sundin talaga ng patient ang sinasabi namin." (We really need collaborative practice because if we look at the patient, the patient does not only need medicines. When a doctor explains and I am present, I also listen attentively so that I can reinforce the information to ensure that the patient will follow our directions.)

Establishing a telepharmacy service that provides drug information advice and ordering system were also found to be solutions, especially with the use of e-prescriptions during the pandemic. It saves time for patients and the pharmacy staff by placing orders before the customer visits the pharmacy or by having them delivered to their house. The introduction of e-prescriptions in the country also provides an opportunity to have different stakeholders to discuss better systems to pilot for better processing of e-prescriptions to ensure their validity and prevent their abuse.

Furthermore, community pharmacies are now looking to branch out to create e-pharmacies, a pharmacy business plan that was minimally utilized before the pandemic. These e-commerce measures allow patients to have access to drug information regardless of the time and location. Integration of digitalization of pharmacy services in community pharmacy practice in collaboration with practitioners, users, and digital platforms have great potential to provide better accessibility to pharmacy services.

DISCUSSION

Challenges and Adaptive Measures of Community Pharmacists during the COVID-19 Pandemic

The COVID-19 pandemic brought a massive burden to patients and healthcare workers globally which included different uncertainties in the profession which caused wariness and anxiety among health workers. Problems in the community pharmacies affected both the supply- and demand-side of operations. Supply-side issues brought about by the pandemic included supply chain management issues, retention of human resources, transportation, and difficulties adapting to health and safety protocols. While demand-side related problems included the sudden shift of fast-moving products from prescription medicines to vitamins and personal protective equipment, reduced customer flow in the pharmacy, difficulty adapting to new regulatory requirements and diversifying their services. These challenges are like the problems encountered by community pharmacies in different parts of the world.[34-36]

Pharmacists had high exposure to patients with both diagnosed and undiagnosed infection during the pandemic; it was found that community pharmacists were more susceptible to acquiring COVID-19 than the general public due to occupational factors that increase the exposure of pharmacists to patients.[36] This increased the reluctance of pharmacists and pharmacy staff to continue coming to work, especially since community pharmacy staff were not tagged as frontline health workers at the start of the pandemic. Aside from higher risk of infection in the workplace, mobility of pharmacy staff was also a problem as transportation was disrupted to reduce the flow of people.[38] However, this proved to be a concern as the community pharmacy is forced to close if there is no pharmacist and other staff that can cater to the needs of patients.

The relevance of pharmacists as contributors to public health was greatly emphasized due to the risk aversion of patients to seek care in other health facilities. Pharmacists served as health educators to promote vaccine utilization and act as agents for health promotion. Pharmacists have played the role as key figures in providing health awareness to lay people in other countries as well.[39] Pharmacists also acted as an informal triage to check for symptoms of patients that may or may not need medical intervention, this created an informal referral system between different community pharmacies, and community pharmacies with hospitals in the locality. Similarly, a study in the Middle East found that pharmacists have multilevel engagements during the COVID-19 pandemic. They ensured an effective medicine supply system, monitoring and resolving drug shortage issues, establish and promote remote pharmacy services, counsel clients on infection prevention, small-scale manufacturing of disinfectants, among others.[19]

Future Direction of the Community Pharmacy Practice Post-COVID-19 Pandemic

The certification of pharmacists as immunizers[40] provided an additional role for pharmacists in the Philippines during the pandemic to aide in the government's COVID-19 immunization program. Immunizing pharmacists provided their services in community pharmacies that provided immunization services, and local government vaccination sites. Certification of pharmacists and upgrading of pharmacy services to include adult vaccination should be continued and implemented by community pharmacies to increase the visibility of pharmacists in immunization services.

Community pharmacy services adapted to the evolving needs of patients that need to be catered to by the facility. The need to digitalize was abrupt and many chain and independent pharmacies quickly transformed their services, with many being able to create limited telepharmacy models to cater patients at their homes. These models made use of messaging platforms such as short message service (SMS), Facebook messenger, WhatsApp, Viber, and others. These telehealth interventions, although limited in low-middle income countries, were effective solutions to communication and service delivery with positive outcomes.[41]

The use of e-prescriptions in other countries started even before the pandemic. Doctors find that e-prescriptions are an efficient way to provide and improve the quality of care for returning patients with previous extensive work-up[42] with the premise of a working e-prescription system accessed by healthcare providers and/or patients. However, as e-prescribing was suddenly implemented in the Philippines, there was not enough time to design and pilot an e-prescribing system that would work for all patients, prescribers, and pharmacists dispensing the drugs. When implemented properly with all appropriate systems in place, e-prescribing would give the ability for pharmacists to check for drug interactions, maintain a patient medication profile, and to perform drug formulary checks.[43] These would further provide support to emphasize the role of pharmacists in the patient's medication management.

Study Limitations

This study has certain limitations. First, since the data collected was only from respondents purposely identified to participate in the FGDs and KIIs, the results may not be representative or generalizable to all pharmacists and administrators working in the community pharmacy settings. Second, there may be a challenge in assessing the veracity of the experiences obtained from the respondents since there was no observation of practice setting was conducted. Nevertheless, the researchers attempted to minimize this by comparing the results with a thorough documentary review. Third, since the study was conducted on an online platform, it may be difficult to capture and document non-verbal cues expressed by the respondents.

CONCLUSION AND RECOMMENDATIONS

The results of the study can be used as a baseline information on the challenges, adaptive measures, and opportunities for community pharmacists during COVID-19 pandemic as there has been paucity of information on community pharmacy practice in the Philippines during the pandemic.

There were various challenges that affected both the supply- and demand-side of pharmacy operations in the community pharmacy practice during the pandemic. The challenges on supply chain management, human resources, transportation, adapting to health and safety protocols, abrupt shift in fast-moving products, reduced customer flow, and adapting to new regulatory requirements required pharmacy owners and pharmacists to adapt to the changing needs of patients and clients during the pandemic.

Due to the adaptive role of the pharmacy profession during the pandemic, there has been an increased relevance of pharmacists in public health such as designing referral systems in a service delivery network and expanding practice of

immunizing pharmacists in adult vaccination. Digitalization of pharmacy services is inevitable and should be allowed to flourish. Regulations should be in place to ensure that these pharmacy services are of good quality and relevance to the patient population.

Furthermore, the pandemic has exhibited the need to shift to the use of e-prescriptions. However, there are limitations to its current use, such as ensuring the validity of the prescriptions when presented in a pharmacy. There is a need to revisit and evaluate the operationalization and implementation of the e-prescribing system used by the country to study its efficiency and quality performance indicators, and provide recommendations for improvement rather than removing the policy after the pandemic.

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