

Pharmacists' Roles and Practices in Pharmaceutical Services During Covid-19 Pandemic: A Qualitative Study

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ABSTRACT

The World Health Organization (WHO) declared COVID-19 a global pandemic on March 11, 2020. Pharmacists as health workers also play an important role in this pandemic. This study aims to dig deeper into how pharmacists perceive their role and pharmaceutical services during this pandemic through a qualitative study with Focus Group Discussions (FGDs). Fifteen pharmacists from The Riau Islands Province were involved in the study based on a purposive sampling technique. They were purposively selected to include a wide range of pharmacists from the community pharmacies, hospitals, and community health centers. The FGDs were conducted via recorded Zoom meetings. The collected data were then transcribed and analyzed with inductive content analysis. This study found five themes with 18 sub-themes. The five themes were the roles and efforts of pharmacists in managing medicines, medical devices, and disposable medical materials (personal protective equipment); the roles of pharmacists in providing pharmaceutical care; community behaviors during the pandemic; development of pharmacists' roles and capacity during the pandemic; and external factors influencing the roles and practice of pharmacists during the pandemic. During the pandemic, pharmacists continued to work according to their previous roles and adjusted their roles and practice in pharmaceutical services to follow changes in community behaviors. This condition also encouraged pharmacists to develop their roles and capacities. The healthcare management team, the government, and the professional organizations influenced their roles, both positively and negatively. The results of this study provide a deeper understanding of pharmacist roles and practices during the pandemic. This understanding will be useful for the pharmacist in developing their potential and capability to be involved as healthcare professionals, specifically during the pandemic situation and generally in disaster management.

Keywords: pharmacist perceptions, pharmacist roles, pharmacy practice, COVID-19 pandemic, qualitative research

INTRODUCTION

The World Health Organization (WHO) received the first official report of a pneumonia case of unknown cause from Wuhan, Hubei Province, the People's Republic of China, on December 31, 2019 (WHO, 2020c). This disease is caused by a virus called Corona or Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which causes general symptoms such as fever with a temperature of more than 38°C, cough without phlegm, shortness of breath, no appetite and being weak (WHO, 2020a). One case in Wuhan

was capable of causing 6.1 million deaths in the world, according to the WHO report as of July 04, 2022 (WHO, 2022).

Pharmacists as health workers have an important role in this pandemic. Several countries in the world, such as the UK, have expanded the role of pharmacists, especially those who practice in the community or are often called community pharmacists during an emergency (natural disaster). Pharmacists are authorized to provide services on repeated prescriptions (repeated patients with chronic diseases), provide treatment

services for patients with minor complaints, and provide vaccinations (NHS England, 2014). In addition, good coordination between pharmacists and other healthcare teams can prevent and alleviate difficulties in the community when a disaster occurs (Alkhalili *et al.*, 2017).

A qualitative study conducted in China during the pandemic showed that pharmacists played critical roles in ensuring the supply of all types of medicines including traditional Chinese medicines, providing drug information and educations for patients and their family and also identify adverse drug reactions (Jia *et al.*, 2021). Some other studies also mentioned different roles of pharmacists during the COVID-19 pandemic, such as disease prevention and infection control, adequate storage and drug supply, patient care and support for healthcare professionals (Visacri *et al.*, 2021).

Previous research related to the perception of pharmacists and their role during the COVID-19 pandemic in Indonesia has been carried out by Kristina *et al.* (2020), who explored the pharmacist's responsibility during the pandemic with a quantitative study. The results of the study showed that pharmacists as a healthcare team can play many critical roles to help the world fight the COVID-19 pandemic. Pharmacists have a good perception to be adaptable with their role and new responsibilities during COVID-19 pandemic (Kristina *et al.*, 2020). This study aims to look deeper into how pharmacists in Indonesia perceive their role and pharmaceutical services during this pandemic through a qualitative study. This understanding may provide evidence for the pharmacists and develop and expand the roles of pharmacists in disaster management.

MATERIALS AND METHODS

Study design and location

This study was designed with a qualitative case study. The qualitative study enabled researchers to explore a process, activity, or event. In this study, the activity and process studied was a pharmaceutical service during the COVID-19 pandemic (Cresswell, 2014). The study was conducted in the city of Tanjungpinang, Kepulauan Riau. The data were collected in July 2021.

Tanjungpinang City is located on the island of Bintan, Kepulauan Riau province with an area of 258.82 km² consisting of 150.86 km² of land and 107.96 km² of the sea. The total population of Tanjungpinang city in 2020 is 220,812 people. The healthcare facilities in the Tanjungpinang City

consist of 3 hospitals, 7 health centers, 11 sub-health centers, 18 village health posts, 44 clinics and 65 community pharmacies (POM, 2021).

Ethics Approval

This research has received ethical approval from the Ethics Committee of the Faculty of Medicine, Public Health and Nursing (FKKMK) Universitas Gadjah Mada No. KE/FK/0610/EC/2021. Before the study was conducted, the participants were provided with detailed information about this study, and written informed consents were collected. After participating, souvenirs were provided as an appreciation to the participants.

Data collection

The data were collected through Focus Group Discussions (FGDs). Two FGDs were conducted: the first FGD involving the pharmacists who worked at hospitals and community health centers and the second FGD involving the pharmacists who worked at community pharmacies and health clinics. The FGDs were led by a moderator (the first author), helped by a note-taker, and were done through a Zoom meeting platform. Participants' inclusion criteria were: pharmacists with practice licenses (Surat Izin Praktik Apoteker/ SIPA), have been working at least since January 2019, working at least 24 hours/week, and are able to communicate well. The ability to communicate well of the participants were assessed by the researcher (the first author). The first author was also a pharmacist in a health clinic in Tanjungpinang city, so she has known and has a good relationship with the pharmacist colleague in the city. Each FGD lasted for about 60-90 minutes, and the entire discussion was carried out in Bahasa Indonesia which was recorded and transcribed word by word before the data was analyzed.

Data Analysis

The data were analyzed using inductive content analysis. The stages of data analysis were as follows 1) data transcription; 2) data organization; 3) reading the transcripts as a whole; 4) encoding the transcript into a certain theme; 5) analysis and interpretation of the data into certain narratives, tables, and patterns. The second and third authors also checked the coding process to improve the trustworthiness of the results. Discussions involving all authors were also held to finalize the data analysis.

Table I. Demographic characteristics of pharmacists who participated in the study

Respondent	Gender	Age (years)	Employment	Years of experience
Pharmacist 1	Woman	42	Public health center	16
Pharmacist 2	Man	33	Hospital	2
Pharmacist 3	Woman	31	Public health center	6
Pharmacist 4	Man	38	Hospital	6
Pharmacist 5	Man	28	Hospital	4
Pharmacist 6	Woman	31	Public health center	6
Pharmacist 7	Man	37	Public health center	7
Pharmacist 8	Man	31	Pharmacy	6
Pharmacist 9	Woman	25	Pharmacy	2
Pharmacist 10	Woman	26	Pharmacy	4
Pharmacist 11	Woman	27	Pharmacy	2
Pharmacist 12	Woman	51	Pharmacy	16
Pharmacist 13	Woman	25	Pharmacy	2
Pharmacist 14	Woman	27	Clinic	3
Pharmacist 15	Woman	27	Clinic	4

RESULTS AND DISCUSSION

Demographic characteristics

Fifteen participants were involved in this study, consisting of 5 male and 10 female participants (Table I). The participants represented pharmacists working in community pharmacies (6 participants), public health centers/ Puskesmas (4 participants), hospitals (3 participants), and clinics (2 participants). The average age of the participants was 31.93 years, and the average duration of practice was 5.73 years. Five themes with 22 sub-themes were generated from the study.

Theme 1: The roles and practices of pharmacists in managing medicines and medical devices during the pandemic

One of the main roles of pharmacists include managing medicines and medical devices. During the pandemic, this role has expanded to follow the changes in healthcare service needs. All participants stated increased demand for some pharmaceutical products for preventing or treating COVID-19, such as paracetamol, vitamins, cold and flu medicines (Table II). There was also an increase in demand for medical devices such as masks and single-use medical materials such as personal protective equipment (PPE) during the pandemic. According to the participants, it has led to a shortage of certain pharmaceutical products and soaring prices. As a result, the pharmacists had to overstock far more than they previously needed. Pharmacists also need to procure medicines, medical devices, and other pharmaceutical products for health care facilities even though they

were expensive. Despite experiencing difficulties, they were able to secure stock of medicines for health care facilities and the community, which was in line with the research results of Kristina *et al.* (2020), who found that Indonesian pharmacists successfully handled patient care and supply of medicines.

The government tried to stabilize the soaring price of some products through issuing a Decree of the Minister of Health of the Republic of Indonesia No. HK.01.07/MENKES/4826/2021 concerning the Highest Circular Price of Drugs during the Corona Virus Disease 2019 (COVID-19) Pandemic. The decision regulates the highest retail price (Harga Eceran Tertinggi/HET) of 11 medicines that support COVID-19 therapy. However, this regulation raised pros and cons among pharmacists, especially those who practice at community pharmacies. This is because the pharmacist had procured those medicines before the decree was applied with a very high price, and they need to follow the regulation to sell them according to the highest retail price, which is much lower.

On the other hand, there was also a decrease in the use of medicines for other therapies, for example, drugs used by dentists, because of the prohibition of dental examinations. Therefore, pharmacists need to adjust drug management and planning methods to follow the need in health services. Moreover, during the pandemic, they also played an important role in managing PPE and COVID-19 vaccines. Participants mentioned that handling and managing the COVID-19 vaccines has

Table II. Theme 1: "The roles and practices of pharmacists in managing medicines and medical devices during the pandemic" and their corresponding sub themes and sample quotes

Pharmacist's Quotes	Sub-theme	Theme
R1: <i>"There has been an increasing need for drugs, especially those related to COVID-19, such as PCT, and vitamins"</i>	The increasing need for medicine, medical equipment, and disposable medical materials during the pandemic	The roles and practices of pharmacists in managing medicines, and medical devices during the pandemic
P8: <i>"Initially, we had a monthly procurement of medical supplies if we get a cheap price. However, at a time like this like it or not, we also have to ensure abundant supplies of masks for a year, or more or less like that. You know, just in case we will have rare supplies of BMHP in the future. I see"</i> <i>"Yes, reserve stock"</i>	Adaptation to drugs management	
P8: <i>"Honestly, I don't agree with the requirement regarding the HET adjustment"</i> <i>"If you follow government prices, we have to sell oseltamivir and Avigan at most, with the margin of 3-5%. Thus, in 1 box with a capital of 2 million, we only gain 76 thousand."</i>	Government policy regarding Highest Retail Price (HET)	
P1: <i>"There has been an increasing needs of drugs to treat COVID symptoms, like paracetamol, vitamins. However, the demand for some drugs seems to be stagnant or currently the conditions at the Puskesmas are like dental clinics."</i>	Reducing the use of pharmaceutical preparations that are not related to COVID-19	
P6: <i>"In addition, the management of pharmaceutical supplies is now also heightened with the COVID vaccine program, which has become daily routine besides other the regular items commonly used in Puskesmas"</i>	Pharmacists are involved in the process of COVID-19 vaccine logistics management	
P6: <i>"This is not to mention to the need to wear PPE, which requires regular management."</i>	Pharmacists are involved in the PPE management process	

now become a routine. Before the pandemic, most of the vaccine management was carried out by the vaccination program manager.

The pharmacists' role in drug management was one of the success factors of the government's vaccination program during the avian flu pandemic a few years ago (Fitzgerald *et al.*, 2017). Adjustment by pharmacists related to the increase and shortage of drugs and medical devices during the pandemic was a continuation of the unexpected increase in demand that exceeded the capacity of producers to meet the required supply (Choe *et al.*, 2020). In addition, the regulation of the highest retail price of 11 drugs for COVID-19 therapy by the government was required because these drugs were needed in large quantities (10-28 days of therapy), and production costs were considered high (Hill *et al.*, 2020). This regulation was also an effort to increase the affordability of therapy for all economic levels of society (WHO, 2020d). However, pharmacists needed to be informed in advance of the regulation.

Theme 2: The roles and practices of pharmacists in clinical pharmacy services during the pandemic

Besides the role in drug management, pharmacists also need to provide care directly to patients and the community (Table III). During the pandemic, the participants in this study stated that pharmacists played an important role in educating patients and the community about health protocols, diseases, symptoms, and the treatment for COVID-19. Information related to COVID-19 has been widely circulated through social media, triggering false information or hoaxes among the public. The participants mentioned that the pharmacists also played an important role in combating the hoaxes by providing facts based on scientific evidence. As also stated by Marwitz, 2021, pharmacists must actively combat hoax news by helping to introduce ways to find and check the correct sources of information to the public in a friendly language (Marwitz, 2021). Moreover, as the COVID-19 vaccination in Indonesia is ongoing, the participants also stated that they provided information about the vaccines and how to get them. Some participants were also involved in the COVID-19 vaccination team.

Some participants, particularly those who work in hospitals or clinics, mentioned that they experienced obstacles in carrying out their clinical pharmacy roles, for example, visiting patients during a pandemic, due to the risk of infection and

the limited number of pharmacists in the hospital. During the pandemic, a strict regulation was implemented for the health workers in providing care for the patients. This is done to protect the public and other health workers from virus transmission (Paudyal *et al.*, 2021).

In providing direct care to the patients, the pharmacist also implemented health protocols by using PPE, maintaining distance, time restrictions on drug information services, education, and counseling patients. These were done to suppress the spread of the virus. Participants also said that they adjusted operating hours if there were pharmacy employees who were confirmed positive. A number of these limitations have encouraged pharmacists to make innovations in providing care through telepharmacy services, online purchases, and home delivery of medicines.

Theme 3: People behavior towards pharmaceutical products during a pandemic

The participants in this study viewed a change in community behavior related to the use of medicines (Table IV). For example, before the pandemic, people rarely bought medicines for colds and cough, but today, most people experienced colds and coughs sought medicines from the community pharmacies. In addition, the easy access to information encouraged people to buy certain medicines and even specific brands that they already know, both for therapy and prevention of COVID-19.

According to the participants in this study, most people came to community pharmacies to buy vitamins, masks, hand sanitizers. However, some of them also wanted to buy prescription-only medicines, such as antibiotics that need a doctor's prescription. Therefore, pharmacists played an important role to justify whether people need those medicines or not. According to some studies conducted in other countries, the factors that influenced people to practice self-medication for Covid-19 were stigma towards people confirmed positive for COVID 19, fear of being quarantined, and fear of having contact with others (Wegbom *et al.*, 2021). In this condition, pharmacists must ensure that the public understands the use of the drug they are looking for, the required dose, and how to consume it (ASHP, 2020). Another belief related to the COVID-19 also emerged in the community was that the hospital or the healthcare workers manipulated the diagnosis of COVID-19. Many people believe that those confirmed positive for COVID-19 were not actually infected.

Table III. Theme 2: "The roles and practices of pharmacists in clinical pharmacy services during the pandemic" and their corresponding sub themes and sample quotes

Pharmacist's Quotes	Sub-theme	Theme
P15: "If we only want to think about money, we won't think about those who are suffering, but the problem is that we have a responsibility, so we have to educate them."	Pharmacists become educators related to COVID-19, drugs, and vaccines	The roles and practices of pharmacists in clinical pharmacy services during the pandemic
P5: "From my experience working at the Puskesmas, currently there has been a lack of human resources at the Puskesmas, thereby I was placed in the Task Force. It was on duty as a night patrol in terms of calling for the use of health protocols to the community or things like that."	Pharmacists become an educator regarding health protocols for the community	
P8: "We explained this information, particularly asking them about where did they receive the information from and where did they get it from? They should not trust anything so easily. For example, if they are uninformed about things, we'll let them know. Hmm, but they should not believe things that easily."	Pharmacists as counter hoax information related to COVID-19 in the community	
P5: "It turned out that he was confirmed positive in the treatment room and was transferred to the isolation room. In the end, our visit as pharmacists ended because no one could enter the room that had been isolated like that. Moreover, because the pharmacy human resources of this Hospital were few, we also considered preventing ourselves to enter the room, because once we get there, we will start to get infected."	Limited Human Resources	
R3: "We fully wear PPE, and keep the particular distance and I also don't talk much like before. Before the pandemic, we were more frequent in providing service, and we provided more communicative information service, but right if now, we try to provide our service as fast as possible."	Adaptation of pharmaceutical service practices during the pandemic	
P13: "In the normal situation, the non-24 hours are usually open at 7 a.m. and close at 11 p.m.. Then since the pandemic, we closed at 10 p.m last year, but now the opening our is much shorter because many staffs have been infected. Thus, we are open at 8 a.m. and close at 10 p.m. If more and more staffs are infected, we are close at 9 p.m."	Service innovation during this pandemic	
P11: "Before the pandemic and after, we may provide online services, via social media, especially for pharmacies. Yes, our pharmacy only provides services via Whatsapp, so if some patients call the pharmacy, we will serve them" "Previously, our pharmacy didn't have any media Social media, but it suddenly came up with one, and thus many people who stay at home can get immediate telemedicine"		

Table IV. Theme 3: "People behavior towards pharmaceutical products during a pandemic" and their corresponding sub themes and sample quotes

Pharmacist's Quotes	Sub-theme	Theme
R10: "At the outset of the pandemic, there was a rare purchase of coughing and flu medicine. Probably, it was because people's fear to seek for treatment with complaints of flu-cough in the past. Previously,, people seemed to be afraid of complaining about the flu-cough, so that's why the turnover for cough medicine turned out to be slow at first. However since the high rate of the case, the turnover of cough medicine is very fast, has and it is sold out quickly. That's what we experienced."	Changes in society's treatment seeking behavior	
P12: "The most sold-out medicines are cough and cold medicines, fever medicines and vitamins. That's it."	Increased purchase of drugs for self-medication	People behavior towards pharmaceutical products during a pandemic
R10: "Hmm, maybe in terms of behavior, many are now looking for vitamins. There are also many who are looking for masks. It's been a long time like this, and also hand sanitizer, which has been like this since a long time. At least that's just a behavior change."	Increased community efforts to prevent COVID-19	
R5: "There were rumors about COVID. I think my friends at this hospital felt very offended if there are people who say those being treated are not infected with COVID-19."	Public distrust of health care services	

Table V. Theme 4: "Knowledge improvement of pharmacists during the pandemic" and their corresponding sub themes and sample quotes

Pharmacist's Quotes	Sub-theme	Theme
R4: "Actually, we as pharmacists have to comply with it because pharmacy is updating knowledge and we are learning all the time."	Increasing knowledge and self-development of pharmacists during the pandemic	
R5: "Well, personally, it's a bit difficult for me to allocate time for training like that, especially when it comes to Zoom seminars like today" "Previously, I directly search for the relevant journals because it was much easier and more flexible to keep going straight to the point. Straight to the point related to the part I want to delve into like that?"	Pharmacist's choice of sources of knowledge during the pandemic	Knowledge improvement of pharmacists during the pandemic
R1: "I've never had training, and I didn't attend seminars, at least I just browse for information by myself"		
R6: "Thus, there are more updates on social media."		
R15: "Can it be prepared, like this, yes, we educate patients who were confirmed positive, because not all, not all patients can receive it first. Thus, if the patient doesn't accept us, how should we calm the patient? What should we do?" "We also need training, right now, since in the technological era, the public is sometimes smarter than us. In some occasions, we are uninformed about things while they already know that."	Pharmacists need training during a pandemic	

Table VI. Theme 5: "External factors influencing the role and practice of pharmacists during the pandemic" and their corresponding sub themes and sample quotes

Pharmacist's Quotes	Sub-theme	Theme
R2: "From us, the core management is like there is a contribution in giving vitamins to all hospital staff."	Support from management	
R4: "both the provincial health office and the city health office have been very good so far, so we have better coordination. We have full support for the provision of supplies and the provision of medical needs and we may be able to convey something needs that are urgent and certainly do not violate the administration, and we will still fulfill them."	Support from the government	
R2: "The procurement of health product, especially for pharmacists who are confirmed positive" "is an encouragement for those of us who are confirmed positive to recover quickly by increasing our immune system as well. Thus, hopefully, it has become a special concern for our profession."	Support of pharmacists' professional organizations	External factors influencing the role and practice of pharmacists during the pandemic
R5: "I find it easier if there are circulars related to guidelines, handbook, treatment or maybe specifically about drug guidelines issued by colleagues from IAI itself. Thus, it is not only treatment guidelines from the medical team but from IAI about issues guidelines on how to treat the therapy. It's easier and more flexible to learn."		
R10: "BPJS as organizing agency can help us as little as possible for relief, right?" "If it's from BPJS, it's the same, it's not like a pandemic. The achievements that must be achieved are still the same, yes, even though sometimes we may have patients or have not, the standard achievements must be the same." "Dentistry practice is like that. You still have to serve patients, while the dentist's ar wearing PPE. I'm sorry, the clinics will take care of it themselves"		

Community distrust in health and government services also happened in developed countries such as the United States. As the economic and social impact of self-quarantine, business and school closures is deepening, reactions have begun to increase in recent protests against orders to stay at home (Udow-Phillips & Lantz, 2020). Likewise, what happened in Tanjungpinang in particular or in Indonesia in general, was that the community did not believe in the decisions made by the Government so some of them refused to be quarantined or comply with the health protocols. This occurs because the efforts to prevent infection and cure patients confirmed positive for COVID-19 were not yet understood by the wider community. Good communication is needed to increase public trust, a form of communication that inspires better than governing (Udow-Phillips & Lantz, 2020).

Theme 4: Knowledge improvement of pharmacists during the pandemic

The capacity of pharmacists needs to be continuously improved through increasing their knowledge during the pandemic. This is an effort to keep pace with the rapid development of information and questions from the public. Participants took various ways to increase knowledge during this pandemic, including attending a webinar and accessing news online or social media. In addition, some participants thought that training was important for pharmacists, especially on how to behave or provide information to patients who are positive for COVID-19 (Table V).

The tendency of pharmacists to seek information through social media is similar to the findings by Kristina *et al.* (2020), which says that the most common source of information used by Indonesian pharmacists to obtain information about COVID-19 is social media (Kristina *et al.*, 2020). According to research Zheng *et al.* (2021), training needs to be carried out by all pharmacy service staff to provide staff with adequate knowledge about COVID-19 prevention and control and control of the pharmacy environment. Adequate training of pharmacists is essential for the success of pharmaceutical services (Zheng *et al.*, 2021). In addition, pharmacists should also receive related training programs on mental health and mental health first aid to support people infected with SARS-CoV-2 (Basheti *et al.*, 2020).

Theme 5: External factors influencing the role and practice of pharmacists during the pandemic

The participants stated that healthcare facilities management, government, and professional organizations influenced the role and practice of pharmacists during the pandemic. The positive attitude from the management also has a good effect on pharmacists. The form of support is shown by providing vitamins for healthy employees as well as health product packages for employees who are confirmed positive for COVID-19. In addition, the government provides support to health service facilities, especially hospitals and health centers, by supplying medicines to support COVID-19 therapy and PPE.

The Indonesian Pharmacists Association (IAI), either at regional or central levels, also supports its members. At the central level, IAI provides learning facilities through free webinars with various themes for pharmacists. Participation credits/SKP are offered as recognition to those who support health protocols and vaccinations. Meanwhile, the regional IAI administrators continuously give moral and material support to their members who are confirmed positive for COVID-19. On the other hand, pharmacists also hope that IAI will issue separate management guidelines for COVID-19 specifically for pharmacist colleagues and develop the role of pharmacists in health care facilities during a pandemic.

However, some participants who worked at several health care facilities in collaboration with the Health Social Security Administration (BPJS) mentioned that BPJS Kesehatan had not changed its policies adapted to the pandemic conditions. There were still demands for achievements, for example, the number of outpatients that could not be achieved during a pandemic. In addition, the higher costs incurred by health service facilities for PPE were not supported by the additional capitation value by BPJS Kesehatan. The explanations related to theme 5 can be seen in Table 6.

This study comes with strengths as well as limitations. Qualitative research provides a more open space for participants to express what they feel as pharmacists working in pandemic situations. Researchers can also explore the healthcare service process by the pharmacist during the pandemic. The study also involved pharmacist representatives from various healthcare facilities. However, pandemic situations provided some barriers in conducting the research.

The discussions were carried out using the Zoom Meeting application without direct face-to-face interaction, as the research was carried out at a time when positive cases of COVID-19 were rising in Indonesia (July 2021). With Zoom meeting, the moderator could not monitor facial expressions or having a direct interaction with the participants as some of them choose to turn off the camera because limited internet connection in the area. This has made some participants passively involved in the discussions. The results of this study are relevant to the practice of pharmacists in Tanjungpinang city, Kepulauan Riau Province and other regions in Indonesia that have similarities in characteristics of geography, socio demography and healthcare facilities.

CONCLUSION

There was an increase in pharmacist's roles and practice during this pandemic, both in drug management and clinical pharmacy services. Pharmacists also adjusted their roles and practice of pharmaceutical services following changes in people's consumption behavior. The pandemic encouraged pharmacists to continue to develop their roles and capacities as health workers. The management of health care facilities, the government, and professional organizations influence the role of pharmacists, both positively and negatively. The results of this study provided evidence that pharmacists were capable of improving their roles during the pandemic situation.

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