Pharmacists’ Roles and Practices in Pharmaceutical Services during Covid-19 Pandemic: a Qualitative Study

Anna Wahyuni Widayanti, Shahiroh Haulaini, Susi Ari Kristina

1. Management Pharmacy, Faculty of Pharmacy, Universitas Gadjah Mada, Skip Utara 55281 Yogyakarta
2. Postgraduate Magister Management Pharmacy, Faculty of Pharmacy, Universitas Gadjah Mada, Skip Utara 55281 Yogyakarta

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*Corresponding author
Anna Wahyuni Widayanti
Email: wahyuni Apt@ugm.ac.id

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, loss of appetite and fatigue (WHO, 2020a). The outbreak started from one confirmed case in Wuhan, and was capable of causing 3.8 million deaths in the world, according to the WHO report as of July 27, 2021 (WHO, 2021).

Pharmacists as health workers play 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 referred to as 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 (Alkhallili et al., 2017).

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. Meanwhile, this study aims to dig deeper into how pharmacists 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
Sample and study design
This study was designed with a qualitative case study, which enabled researchers to explore a process, activity, or event. This study aims to study the activity and process of pharmaceutical services during the COVID-19 pandemic (Cresswell, 2014), particularly in the city of Tanjungpinang, the Islands of Riau. The data were collected in July 2021.

Ethics Approval
Ethical approval for the study was obtained from the Ethics Commission of the Faculty of Medicine, Public Health and Nursing (FKMK) Universitas Gadjah Mada No. KE/FK/0610/EC/2021. Before enrolling in a study, the participants were provided with detailed information about this study; and thus written informed consents were obtained. After their research participation, participants were provided with souvenirs as an appreciation.

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), assisted by a note-taker, and were performed via a Zoom meeting platform. Participants’ inclusion criteria were: pharmacists with practice license (Surat Izin Praktik Apoteker/ SIPA), having been employed at least since January 2019, working for at least 24 hours/week, and being able to communicate well. Each FGD lasted for about 60-90 minutes. The discussion was recorded and transcribed verbatim before the data were 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) transcription reading as a whole; 4) transcription charting into a certain theme; 5) analysis and interpretation of the data into certain narratives, tables, and patterns. The second and third authors also checked coding process to improve the reliability of the results. Discussions involving all authors were also held to finalize the data analysis.

RESULTS AND DISCUSSION
Demographic characteristics
Fifteen participants were involved in this study, consisting of 5 men and 10 women (Table 1). The participants represented pharmacists working in community pharmacies (6 participants), community 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.

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 that there had been increasing demands for some pharmaceutical products for preventing or treating COVID-19, such as paracetamol, vitamins, cold and flu medicines (Table 1). There was also an increase in needs for medical devices, namely 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 needed to procure medicines, medical devices, and other pharmaceutical products for health care facilities even though they were expensive. Despite these difficulties, they managed to save the stock of the needs of health care facilities for the community, which is in line with the research results of Kristina et al. (2020), who found that Indonesian pharmacists successfully handled patient care and supply of medicines.

On this account, the government tried to stabilize the soaring price of some products by 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/GET) 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 issuance of the decree at a very high price, but they needed to comply with the newly made 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 keep up with 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 now become a daily 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.

Besides the role in drug management, pharmacists also need to provide direct treatment to patients and the community (Table III).
Table 1. Theme 1: "The roles and practices of pharmacists in managing medicines and medical devices during the pandemic" and their corresponding subthemes and sample quotes

<table>
<thead>
<tr>
<th>Pharmacist’s Quotes</th>
<th>Sub-theme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1: &quot;There has been an increasing need for drugs, especially those related to COVID-19, such as PCT, and vitamins&quot;</td>
<td>The increasing need for medicine, medical equipment, and disposable medical materials during the pandemic</td>
<td>The roles and practices of pharmacists in managing medicines, and medical devices during the pandemic</td>
</tr>
<tr>
<td>P8: “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” “Yes, reserve stock”</td>
<td>Adaption to drugs management</td>
<td></td>
</tr>
<tr>
<td>P8: “Honestly, I don’t agree with the requirement regarding the HET adjustment” “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.”</td>
<td>Government policy regarding Highest Retail Price (HET)</td>
<td></td>
</tr>
<tr>
<td>P1: “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.”</td>
<td>Reducing the use of pharmaceutical preparations that are not related to COVID-19</td>
<td></td>
</tr>
<tr>
<td>P6: “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”</td>
<td>Pharmacists are involved in the process of COVID-19 vaccine logistics management</td>
<td></td>
</tr>
<tr>
<td>P6: “This is not to mention to the need to wear PPE, which requires regular management.”</td>
<td>Pharmacists are involved in the PPE management process</td>
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The roles and practices of pharmacists in clinical pharmacy services during the pandemic and the corresponding sub-themes and sample quotes

Table III: Theme 2: The roles and practices of pharmacists in clinical pharmacy services during the pandemic and the corresponding sub-themes and sample quotes
Table IV. Theme 3: "People behavior towards pharmaceutical products during a pandemic" and their corresponding sub themes and sample quotes

<table>
<thead>
<tr>
<th>Pharmacist’s Quotes</th>
<th>Sub-theme</th>
<th>Theme</th>
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</thead>
<tbody>
<tr>
<td><strong>R10:</strong> &quot;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.”</td>
<td>Changes in society’s treatment seeking behavior</td>
<td>People behavior towards pharmaceutical products during a pandemic</td>
</tr>
<tr>
<td><strong>P12:</strong> &quot;The most sold-out medicines are cough and cold medicines, fever medicines and vitamins. That’s it.”</td>
<td>Increased purchase of drugs for self-medication</td>
<td></td>
</tr>
<tr>
<td><strong>R10:</strong> &quot;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.”</td>
<td>Increased community efforts to prevent COVID-19</td>
<td></td>
</tr>
<tr>
<td><strong>R5:</strong> &quot;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.”</td>
<td>Public distrust of health care services</td>
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Table V. Theme 4: "Knowledge improvement of pharmacists during the pandemic" and their corresponding sub themes and sample quotes

<table>
<thead>
<tr>
<th>Pharmacist’s Quotes</th>
<th>Sub-theme</th>
<th>Theme</th>
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<tbody>
<tr>
<td><strong>R4:</strong> “Actually, we as pharmacists have to comply with it because pharmacy is updating knowledge and we are learning all the time.”</td>
<td>Increasing knowledge and self-development of pharmacists during the pandemic</td>
<td>Knowledge improvement of pharmacists during the pandemic</td>
</tr>
<tr>
<td><strong>R5:</strong> “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?”</td>
<td>Pharmacists’ choice of sources of knowledge during the pandemic</td>
<td></td>
</tr>
<tr>
<td><strong>R1:</strong> “I’ve never had training, and I didn’t attend seminars, at least I just browse for information by myself.”</td>
<td>Pharmacists need training during a pandemic</td>
<td></td>
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<td><strong>R6:</strong> “Thus, there are more updates on social media.”</td>
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<td></td>
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<tr>
<td><strong>R15:</strong> “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.”</td>
<td></td>
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Epidemic

External factors influencing the role and practice of pharmacists during the pandemic and their corresponding sub-themes and sample

Support from the government

Support from healthcare professionals

Organizations supporting pharmacists in professional development

Table 1. Theme 5: External factors influencing the role and practice of pharmacists during the pandemic and their corresponding sub-themes and sample

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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 information derived from scientific evidence. As also stated by Marwitz, 2021, pharmacists must actively combat fake 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, along with the ongoing COVID-19 vaccination in Indonesia, the participants also stated that they provided information about the vaccine availabilities and how to get them. Some participants were also part of the COVID-19 vaccination team.

Some participants, particularly those who work in hospitals or clinics, mentioned some obstacles in carrying out their clinical pharmacy roles, for example, in visiting patients during a pandemic, due to the risk of infection and the limited number of pharmacists in the hospital. During the pandemic, health workers are required to comply with strict regulation in providing patients with medical treatment. This is done to protect the public and other health workers from virus transmission (Paudyal et al., 2021).

In the provision of direct treatment for patients, the pharmacist are also subject to health protocol requirements for wearing 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 revealed some adjustments on restricted operating hours in case some pharmacy employees were confirmed positive. A number of these limitations have encouraged pharmacists to make innovations in providing healthcare services through telepharmacy services, online purchases, and home delivery of medicines.

The participants in this study viewed some changes 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 experiencing colds and coughs will seek for medicines from the community pharmacies. In addition, the easy access of information encouraged people to buy certain medicines and even specific brands they are well aware, both for therapy and prevention of COVID-19.

According to the participants, 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 research in other countries, the causative factor of self-medication is the bad stigma about people who are confirmed positive for COVID, fear of being quarantined, and fear of contact with people suspected of being infected (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 that the hospital manipulated the diagnosis of COVID-19. People believe that those confirmed positive for COVID-19 were not infected. Community distrust in health and government services also happened in developed countries, such as the United States. The heightening economic and social impact of self-quarantine, business, and school closures has led to the escalating reactions and protest against orders to stay at home (Udow-Phillips & Lantz, 2020). This occurs because the efforts to prevent infection and cure patients confirmed positive for COVID-19 are yet to be 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).

The capacity of pharmacists needs to be continuously improved by 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 for information through social media is similar to the findings by Kristina et al. (2020), which revealed
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 a research by 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).

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 (Table VI).

CONCLUSION
There was an increase in pharmacist’s roles and practice during this pandemic, both in terms of 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 influenced 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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