PRACTICE OF SELF MEDICATION DURING THE COVID-19 PANDEMIC: A STUDY OF PHARMACIES IN CIREBON, WEST JAVA, INDONESIA

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Abstract. COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus-2. In March 2020, WHO declared COVID-19 as a global pandemic. During the pandemic, it was found that people prefer to buy medicines independently from the pharmacy rather than going to the doctor or hospital. This condition was not good, because using medication without supervision can increase the risk of health problem. This study aimed to describe the practice of self-medication among the community during the COVID-19 pandemic. This research used a descriptive design, conducted in Cirebon from August to September 2020. The number of the respondent was 500, with a consecutive sampling technique. The results showed the respondents characteristics as follows: median age of 38 years, 64% female, 36% housewife, 39% attained senior high school, 59.6% had less than the regional minimum wage, and 84% had no health insurance. There were four classes of medicines that were most often used among the community during the COVID-19 pandemic: analgesics (51%), corticosteroids (23%), proton pump inhibitor (6%), antibiotics (11%), and vitamins (10%). The majority of people who practice self-medication used analgesics, corticosteroids, and antibiotics. This fact requires attention and action, because self-medication has negative impacts on individual health such as adverse drug reactions and antibiotic resistance.

Keywords: self-medication, non-prescription medicines, COVID-19

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). In March 2020, the World Health Organization (WHO) announced that COVID-19 had become a pandemic worldwide (WHO, 2020). Since its first appearance, the number of positive patients and mortality from COVID-19 has been increasing day by day. For this reason, many new policies such as limiting the activities outside the home, wearing a face mask, keeping distance, and not seeking the medical facility in a hurry except in emergency cases were implemented. This suggestion aimed to deal with COVID-19 which continuously spread widely (Velavan and Meyer, 2021; Quincho-Lopez *et al*, 2021).

The outbreak of the corona virus has forced many countries in the world, including Indonesia, to implement lockdowns as recommended by WHO. During the lockdown, some research found that people avoided crowded public places, used face masks, avoided physical contact, improved their personal hygiene, diet, and physical activities. This condition causes changes in individual's daily activities and life styles. People become afraid to go to a doctor or hospital so they choose to do self-medication (Quincho-Lopez *et al*, 2021; Dare *et al*, 2022).

WHO defines self-medication as the medical treatment of self-identified problems or symptoms with drugs without consulting with a qualified health professional, or the intermittent/continued use of medicines previously given by a physician for chronic/recurring conditions (Araia *et al*, 2019). Self-medication is a common practice around the world and has been recognized as an important aspect of health policy in many countries. This is especially noticeable during pandemic COVID-19 (Zheng *et al*, 2023).

The systematic review and meta-analysis studies show that during the COVID-19 pandemic, the prevalence of self-medication ranged from 7.4% - 88.3%, and Asia had the highest prevalence of self-medication at 53%

while and the lowest prevalence was Europe at 40.8% (Zheng *et al*, 2023). Categories of medicines commonly varied widely including antibiotics, herbs, ivermectin, vitamins, and analgesics (Zheng *et al*, 2023; Kazemioula *et al*, 2022)

The self-medication phenomenon is still a challenge among medical practitioners because several conditions must be considered, such as the correct dose, right of group selection, proper duration of administration, and doctor's indications, to minimize side effects such as antibiotic resistance, allergic reactions, and others (Dare *et al*, 2022).

In Indonesia, there have not been many studies on self-medication during the COVID-19 pandemic. The researcher hopes that this research data will be useful to complete data on self-medication in Indonesia. This study aimed to describe the practice of self-medication among the community during the COVID-19 pandemic.

MATERIALS AND METHODS

This descriptive study used a consecutive sampling technique with the sample number of 500. The research settings of this present study are five pharmacies in Cirebon City and were conducted from August to September 2020. The pharmacies used as research settings were pharmacies in West Cirebon, East Cirebon, South Cirebon, North Cirebon and Central Cirebon. Respondents were medicine buyers at pharmacies while health workers were excluded from this study.

The data in this study were gathered with a validated questionnaire to explore the information on self-medication during COVID-19 pandemic. The questionnaire contained questions about respondents' characteristics such as age, gender, occupation, education level, family income, health insurance ownership, what type of medicine was purchased and the source of information about medicine.

All respondents of the study were given an explanation of the research, such as the objectives, benefits, research procedures, and guarantees of the confidentially of all information and personal data of the respondents. Then respondents who were willing to participate voluntarily in this present study were asked for written approval by filling out the informed consent. This study was approved by the Medical Research Ethics Committee at the Hospital of Gunung Jati, Cirebon, West Java, Indonesia (Registration no. 070/LAIKETIK/KEPKRSGJ/VIII/2020).

RESULTS

Table 1 presents the median age of respondents was 45, and the majority of them was female (n= 320, 64%). Based on occupations, the respondents of this study are primarily housewives (*n* = 180, 36%). It is revealed that the distribution of the highest number of respondents comes from senior high school education, with the frequency of 195 respondents (39%). Most respondents belong to the low income (*n* = 298, 60%). For the ownership of health insurance, in this study, the majority of respondents did not have health insurance (*n* = 420, 84%).

Table 1
Characteristic of respondents (N = 500)

Characteristic	Frequency *n* (%)*
Age in years	
Median	45
Range	15-74
Sex	
Male	180 (36)
Female	320 (64)

Table 1 (cont)

Characteristic	Frequency *n* (%)*
Occupation	
Civil servant	6 (1)
Farmer	11 (2)
Small scale merchant	160 (32)
Student	59 (12)
Lecturer/Teacher	8 (2)
Housewife	180 (36)
Unemployed	76 (15)
Last education level	
Elementary school	135 (27)
Junior high school	133(27)
Senior high school	195 (39)
Diploma/bachelor/master	37 (7)
Monthly family income	
Less than regional minimum wage	298 (60)
More than regional minimum wage	202 (40)
Health insurance ownership	
Yes	80 (16)
No	420 (84)

*Unless otherwise stated

As seen in Table 2, there are four classes of drugs that are most often used by the public without prescription during pandemic COVID-19, ie analgesic (51%), corticosteroid (23%), proton pump inhibitor (6), antibiotic (11%), and vitamins (10%). The majority of respondents get the information about medicines based on previous prescription with similar disease (41%).

Table 2
Self-medication practice (N = 500)

Self-medication practice	Frequency *n* (%)
Type of medicine mostly purchased	
Analgesics	255 (51)
Corticosteroids	113 (22)
Proton pump inhibitors (PPIs)	29 (6)
Antibiotics	55 (11)
Vitamins	48 (10)
Source of information	
Family	104 (21)
Friends	79 (16)
Early prescription	206 (41)
Advertising	40 (8)
Pharmacy staff	71 (14)

DISCUSSION

Self-medication is common practice among the community and the prevalence varies throughout the world. Previous study revealed that there is a significant decrease in the percentage of people that practiced self-medication before the COVID- 19 pandemic compared to the percentage of people that practiced self-medication during the COVID-19 pandemic lockdown (Dare *et al*, 2022) . Most people choose to limit physical contact and adopt a healthy lifestyle to reduce the prevalence of disease. However, Onchonga (2020) showed the trends of the web search queries 'self-medication, 'self-care' and/or 'self-administration' was increased since the 2019 coronavirus global pandemic was declared and this would be

an indication that there has been an increased interest in the number of people searching for information about self-medication.

This present study showed the medicines most commonly used for self-medication were analgesics. This result is different from research in Peru and Pakistan. In Pakistan, the most medicines used are vitamins (Chaudhry *et al*, 2022), while in Peru are antibiotics (Quispe-Cañari *et al*, 2021). However, this finding is similar to the study in Saudi Arabia (Ibrahim *et al*, 2015). Not all analgesic groups can be traded over-the-counter without a prescription; one example is mefenamic acid, which must accompany a doctor's prescription. If the public is ignorant of this, they consume the medicines without indications, which leads to other side effects (Ibrahim *et al*, 2015).

The second class of medicines most purchased by the public is corticosteroids. Corticosteroids are a semi-synthetic derivate of adrenocortical hormones. In use without indications, corticosteroids have a reasonably significant side effect, namely Cushing syndrome with manifestations such as moon face, thick neck, atrophy of dermis layer, and can also be accompanied by hypertension (Nappi *et al*, 2023).

As 55 people from 500 samples, or 11% of respondents, buy antibiotics without a prescription, antibiotic resistance will be a problem resulting from the irrational use of antibiotics. Resistance occurs when bacteria change in one way or another, causing a decrease or loss of effectiveness of a drug, chemical, or other substance used to prevent or treat the infection. Bacteria that can survive and multiply pose more danger and cause high morbidity and mortality rates from patient infections become uncontrollable (Simegn and Moges, 2022; Sachdev *et al*, 2022).

Buying non-prescription medicines that are carried out continuously without particular supervision or regulation impacts new problems such as antibiotic resistance, polypharmacy, use of drugs without indications, worsening disease conditions, and many more (Ruiz, 2010).

The limitations of this study are the study design was descriptive; and we did not ask about symptoms of illness and reasons for choosing self-medication.

In conclusion, self-medication among the community of Cirebon was common practice during COVID-19 pandemic. In our study, most of respondents used analgesics and corticosteroids as their self-medication practices. Recently WHO has declared that the COVID 19 pandemic has ended. The practice of self-medication among the community during the COVID-19 pandemic indirectly creates poor medical practices, so further studies on self-medication behavior in the community need to be continued in order to develop new health policies, especially regarding drug purchasing practices in the community.

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CONFLICT OF INTEREST DISCLOSURE

Authors have nothing to declare.

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