Characteristics of Indonesian Society in Utilizing Herbs for Covid Prevention during the Covid-19 Pandemic

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Abstract: Until now, Coronavirus disease-19 (Covid-19) is still a significant problem in various countries in the world and Indonesia. Various prevention efforts continue to be carried out by people around the world. In Indonesia, prevention efforts continue to be made, including the use of vaccines and herbs. Herbs are plants that can be used as medicine. This study aims to determine the use of herbal medicines to prevent Covid-19 during the pandemic in several regions in Indonesia. Questionnaires were distributed to the public in several provinces in Indonesia. The questionnaire was given in the form of a G form which was distributed online. The results obtained from the questionnaire show that the Indonesian people who use herbs are more female (66.4%) than male, aged 17-25 years (29.9%), with undergraduate/diploma education (42.7%). At the same time, the types of herbs that are widely consumed are herbal concoctions themselves (45.3%), where the use of these herbal medicines has increased in the last year (41.4%). Herbal medicines can be an alternative for the Indonesian people to prevent being infected with Covid-19.

1. Introduction

Covid-19 became known in December 2019 in Wuhan, China, and then spread to various countries and became a worldwide pandemic [1]. Since then, there have been various problems and significant changes, both in the fields of health, economy, technology, social and so on [2]. Health financing for disease management, especially Covid, has become high. Every country is trying to tackle Covid comprehensively, including Indonesia. The number of patients affected by COVID-19 as of September 16, 2021, reached 226,236,577 cases. Of that number, 4,654,548 people died, and 5,634,533 people had received the vaccine [3]. In Indonesia, there are 4,178,164 cases of illness, a total of 139,682 deaths, and 3,953,519 who have been declared cured as of September 14, 2021 [4]. Various preventive measures have been taken by the Government, including the socialization of 3M (using masks, washing hands, and keeping a distance) [5], administering vaccines to create a state of herd immunity, and using herbal plants/herbal medicines as an effort to increase body resistance [6].

Herbs are plants that can be used as medicine. Herbal plants can be planted in the house's yard and used as TOGA (Family Medicinal Plants) [7]. Herbs are believed to have been passed down from generation to generation to maintain the health of the Indonesian people. It can even be used to treat various minor ailments encountered in daily life [8]. Indonesian people often use various herbal medicines as a preventive effort. Each region has several plants that are suitable to grow according to their respective geographical conditions. Especially during the Covid-19 pandemic, the use of herbal medicines is increasing [9].

2. Methodology

2.1 Research Design

The type of research used is descriptive cross-sectional. This study was conducted to determine the use of herbal medicines to prevent Covid-19 during the pandemic in several regions in Indonesia.
Distributed questionnaires with simple random sampling to the public in several provinces in Indonesia. These provinces include Aceh, North Sumatra, West Sumatra, Riau/Riau Islands, Jambi, South Sumatra, Bengkulu, Bangka Belitung Islands, Lampung, West Java, Central Java, East Java, DKI Jakarta, Banten, DI Yogyakarta, Bali, NTT, NTB, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, Gorontalo, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, North Maluku, Maluku, Papua (Jayapura) and West Papua. The validated questionnaire was given in the form of a G form which was distributed online. The researcher asked the respondent's consent to fill out the questionnaire written in the informed consent.

2.2 Population and samples
The population used is the Indonesian people who use herbs for the prevention of covid. The number of samples obtained as many as 461 samples within two weeks of data collection. The results obtained are then classified and processed for later presentation.

3. Results and Discussion
3.1. Characteristics of herbal users in Indonesian society
The questionnaire results in the form of respondents' characteristics in the use of herbal medicines during a pandemic in Indonesian society can be seen in Table 1 below.

Table 1. Characteristics of respondents in the use of herbal medicines during the Covid-19 pandemic

| Characteristics          | Total   | Percentage (%) |
|--------------------------|---------|----------------|
| **Sex**                  |         |                |
| Male                     | 155     | 33.6           |
| Female                   | 306     | 66.4           |
| **Age**                  |         |                |
| 17-25                    | 138     | 29.9           |
| 26-35                    | 113     | 24.5           |
| 36-45                    | 93      | 20.2           |
| 46-55                    | 83      | 18.0           |
| 56-65                    | 34      | 7.4            |
| **Level of Education**   |         |                |
| Elementary School        | 4       | 7.4            |
| Middle School            | 3       | 9              |
| High School              | 152     | 33.0           |
| Diploma/ S1              | 197     | 42.7           |
| Master's Degree          | 94      | 20.4           |
| Doctoral S3              | 11      | 2.4            |
| **Residence**            |         |                |
| Sumatera                 | 91      | 19.7           |
| Java                     | 289     | 62.7           |
| Bali +NTB                | 20      | 4.3            |
| Sulawesi                 | 15      | 3.2            |
| Kalimantan               | 20      | 4.3            |
| Papua                    | 26      | 5.6            |
| **Occupation**           |         |                |
| Housewife                | 55      | 11.9           |
| ASN                      | 98      | 21.3           |
| BUMN                     | 5       | 1.1            |
| Entrepreneur             | 35      | 7.6            |
| Private agency           | 69      | 15.0           |
| Student/student          | 121     | 26.2           |
| Other                    | 78      | 16.9           |

Number of respondents. n = 461 people
From Table 1, it was found that female respondents (66.4%) consumed more herbal medicines than male respondents (33.6%), and the age of respondents who used herbs the most was in the range of 17-25 years (29.9%) followed by young adults 26-35 years (24.5%). It is also obtained from the data that the area that uses much herbal medicine is the island of Java (62.7%). As for the respondent's work, it was found that students (26.2%) were the community group that used herbal medicine the most.

There are various kinds of herbal medicines that the people of Indonesia use. Herbal medicines used can be in the form of herbal plants that are formulated by themselves, herbal medicines, standardized herbal medicines, and Fitofarmaca. The Indonesian people use various types of herbal medicines can be seen in Table 2.

**Table 2. Utilization of types of herbal medicines by the Indonesian people during the Covid-19 pandemic**

| Types of herbs                                      | Total | Percentage (%) |
|-----------------------------------------------------|-------|----------------|
| Homemade Herbs                                      | 209   | 45.3           |
| Jamu ready to drink                                 | 80    | 17.4           |
| OHT available at Pharmacies /drug stores            | 107   | 23.2           |
| Fitofarmaca available at pharmacies /drug stores    | 56    | 12.1           |
| Fitofarmaca prescribed by doctors                   | 9     | 2.0            |
| Total                                               | 461   | 100            |

From Table 2, it is found that the Indonesian people widely consume herbal medicines, especially herbal medicines made by themselves (45.3%). This was followed by standardized herbal medicines (OHT) available in pharmacies (23.2%) and ready-to-drink herbs (17.4%). In comparison, the use of Fitofarmaca (12.2%) is still not too much, especially those prescribed by doctors (2%).

Some Indonesian people are used to consuming herbal medicines. With the Covid-19 pandemic going on for more than two years, people are increasingly aware that herbal medicines can be used to prevent infection with the Covid-19 disease. The following data was obtained when using herbal medicines by the Indonesian people before and during the Covid-19 pandemic. It can be seen in Table 3.

**Table 3. The time of using herbal medicines by the Indonesian people**

| Types of herbs               | Total | Percentage (%) |
|------------------------------|-------|----------------|
| During the Covid-19 pandemic:|       |                |
| Since 1 year ago             | 191   | 41.4           |
| Since 2 years ago            | 52    | 11.3           |
| Since 3 years ago            | 19    | 4.1            |
| Before the Covid-19 pandemic:| 199   | 43.2           |
| Before 3 years ago           |       |                |
| Total                        | 461   | 100            |

From Table 3 above, it was found that people were used to using herbal medicines before the Covid-19 pandemic, which if you add up the results from the respondents in the three years before Covid-19, there were quite a lot of 199 respondents (43.2%). Furthermore, since the onset of Covid-19, in Wuhan in 2019, and the outbreak of Covid-19 until there was an outbreak /pandemic around the world in early 2020 until now, there has been an increase in the use of herbs in the respondent's data above. Where three years ago (at the end of 2019) there were 19 respondents (4.1%), then it increased to 52 respondents in 2020 (11.3). Furthermore, in the last year, in 2021, the number of respondents who used herbs increased to 191 people (41.4%). So it can be concluded that the use of herbal medicines by the Indonesian people during the Covid 19 pandemic is increasing compared to the beginning of the pandemic.
The tradition of using or consuming herbs as medicine has become an Indonesian cultural heritage. Many studies have shown that herbs are efficacious for maintaining the health of the human body [10]. The respondents found that the use of herbs in women was more than in men. This can be due to the activities of women who often require a lot of hard work to work at home, look after children and often earn a living or be outside the home, so people think that using herbs can better maintain health and increase immunity during a pandemic covid-19. This is different with research on the use of herbal plants by Lisma (2021), which stated that herbal users during the Covid-19 pandemic were mainly men (51%) [11].

Furthermore, for the age factor, adolescence and young adulthood are the highest respondents in the use of herbs. Adolescents aged 17-25 years (29.9%) are usually still at the level of receiving higher education. The reason for using herbs at this age is that people, especially teenagers, prefer to maintain their health so that they stay healthy in studying activities. They were then followed by young adults, namely 26-35 years (24.5%), where teenagers and young adults usually receive more information, especially from social media, which can provide interesting information about the use of herbs to increase the desire to use herbs. In maintaining the immune system. This study is also in line with research conducted by Lisma, which stated that most respondents who used herbs during the Covid-19 pandemic were 26-39 years old, which was 43% [11].

In general, in terms of education level, people with higher education will have broader knowledge than people with lower education. The level of knowledge about herbal medicine will affect the attitude and behavior of using herbal medicine. The higher the knowledge, the higher the frequency of using herbal medicines [12,13]. It can be seen from the educational data of herbal users that respondents who are at a higher level of education already have broader knowledge about herbal medicines, so that they use at the high school and college education level is more than the elementary or junior high school education level. However, in the study, it was found that the higher the level of education, the use of herbs decreased. This could be due to the educated group above undergraduates who prefer to consume Standardized Herbal Medicines (OHT) and Fitofarmaca (FF) in addition to using conventional drugs from doctor's prescriptions. In contrast to Dian's research, which states that sociodemographic factors are not related to the level of knowledge about herbal medicine. Where knowledge about herbal medicine can be increased through the provision of appropriate education to the needs and sociodemographic conditions of the community [14].

Based on the regional origin, respondents who use herbs a lot are on the island of Java (62.7%). This is because herbal medicine is already deeply rooted in Indonesian society, especially in Java. People in Java have had traditional medicine, which has been passed down from generation to generation, and its use is still maintained in maintaining health in daily life. However, currently, the use of conventional medicine has been widely used [15]. There are many sellers of herbal medicine in the form of fresh drinks sold around the house. However, in its current development, more and more herbal/herbal preparations are being sold on social media in a more modern form. Furthermore, the use of herbal types after making their own is that Indonesian people buy standardized herbal medicines at pharmacies which are also high (23.2%). This may be due to the relatively busy pattern of people who do not have time to make their herbs but still try to consume herbs instantly.

Meanwhile, in terms of work, it was found that herbal users were mostly used by students, especially those who were still studying in college. This is related to the age factor where teenagers consume more herbs and are still students. This is not in line with research from Dian, which states that the use of herbs based on work is dominated by housewives (41.7%) [14]. For the use of herbs, the data proves that gender, age, education, regional origin, and occupation affect the use of herbal medicines.

3.2 Utilization of Herbal Medicines by Indonesian Society

3.2.1 Classification of Types of Herbal Medicines that are often consumed in the last year.

Indonesia is very well known for its diversity of plants and spices, often used as ingredients for medicines and herbal supplements [16]. The use of herbs is grouped into three groups: herbs/herbs, standardized herbs, and phytopharmaceuticals [17]. The use of herbs is as medicine in steeping ingredients, herbs standardized herbal medicines, and Fitofarmaca. Herbal medicine is a cultural heritage of the Indonesian nation, which has traditionally been used to improve health status with empirical supporting data regarding its safety and benefits. Not everyone can take herbal medicine. Several groups need to be careful in taking herbal medicines, including pregnant and lactating women, people about to undergo surgery, and people with certain medical conditions. Certain medical conditions, namely: impaired liver function, impaired kidney function, or autoimmune diseases. In addition, herbal medicines cannot be taken with certain medicines, such as blood pressure-lowering drugs, blood-thinning drugs, and drugs for diabetes, because they can cause drug interactions and serious side effects. Even if you still want to use and consume herbs, herbal medicines must be a few hours away from the use of conventional medicines from doctors. For this reason, research continues with pre-clinical and clinical trials that are used as scientific evidence
of the use of herbs as standardized herbal medicines and Fitofarmaca and research on standardization of ingredients [18].

The results obtained indicate that in Indonesia, the most consumed herbal medicine is herbal medicine compared to OHT and FF. Herbs are widely available in everyday environments, even in the kitchens of people's homes, so they are easy to make on their own. Usually, the herbs that are widely used to make their own (homemade herbs) are ginger, turmeric, kencur, and temulawak [19]. Herbal medicine, OHT, and FF have different effectiveness against disease [20]. The development of synthetic organic chemistry science and technology in developed countries is overgrowing, but many still use herbs now. However, the choice of herbal medicine can be caused by the ease with which people get it, the ingredients are available at home, and it is economical [19].

It should be noted again that herbs can be used to maintain immunity and overcome symptoms but still avoid side effects. Meanwhile, the handling of severe symptoms of Covid-19 must still use medical measures and conventional medicines by competent doctors. Many people think that traditional medicine is safer than synthetic drugs [21]. Even though they are made from natural ingredients, herbal medicines are not necessarily safer than medical medicines. When taking herbal medicines, it is necessary to pay attention to the type of herb, dosage, and duration of consumption. Sufficient information is needed regarding the ingredients in traditional medicinal products and health supplements. People can choose and use appropriately and wisely various traditional medicines and health supplements appropriately and wisely to deal with Covid-19 [18].

3.2.2. Increase in the use of herbal medicines in the last year.

The results obtained from the use of herbs in everyday life have been widely felt by the Indonesian people empirically, but various studies on testing the effectiveness of herbs continue to be carried out. Moreover, the current condition of the Covid-19 pandemic has led to an increase in research interest in the use of herbal medicines that can be useful in maintaining health and immune-boosting supplements, both in terms of prevention and as a companion to Covid-19 treatment [18].

Before consuming herbs, we must also pay attention to whether the symptoms experienced are getting better or even getting worse. The use of herbs that are too short or too long will affect the results obtained, so clearer and more precise rules are needed in their use. The use of too short or too long herbs will affect the results obtained, so more explicit and more precise rules are needed in their use. Likewise, the number of herbs used must be regulated [22].

In general, the challenges and obstacles to the development of medicinal plants include cultivation, conservation/preservation efforts, quality standardization, laws and regulations, research networks, applications of research results that have not been maximally developed, and the lack of information for the public on knowledge of medicinal plants. Government support for policies on the use of herbal medicines must be increased. The practical use of herbs that are very helpful for the community both in terms of prevention and assisting the treatment of Covid-19 can provide even better results.

4. Conclusion

Indonesian people for generations have used herbal medicine to maintain their daily health. The results obtained from the questionnaire show that the Indonesian people who use herbs are more female (66.4%) than male, aged 17-25 years (29.9%), with a bachelor/diploma education level (42.7%).

Various types of herbal medicines were used. In this study, it was found that herbs in the form of herbal medicines formulated themselves (45.3%) were the most widely used herbal medicines by the people of Indonesia. The use of herbal medicines during the Covid-19 pandemic has increased, especially in the past year (41.4%). This can happen due to the broader socialization of herbal medicines and the many benefits that the people of Indonesia feel.

Conflict of Interest

There are no conflicts of interest in this article.

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