

## AN OVERVIEW OF THE HERBAL MEDICINE USAGE TO MAINTAIN BODY IMMUNE SYSTEM AT THE UNIVERSITY OF AUGUST 17, 1945 JAKARTA

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**Abstract** The purpose of this study was to find out an overview of the herbal medicine usage as an immune booster at the University of August 17, 1945 Jakarta. The characteristics of the description of the use of herbal medicine to increase endurance obtained are the average in the age category (26-45 years) of 41.00%, the majority sex of men as much as 53.70%, the most education level is Bachelor (S1) of 42.10%. A type of medicinal plant to increase the body's resistance is red ginger (60.00%). Utilization of medicinal plants as a self-medication effort (78.90 %). An overview of recommending or giving the herbs to others for free (50.50%). The level of knowledge about traditional medicine within the University of August 17, 1945 Jakarta is good as many as 68 people (71.60%).

**Keywords** Overview • Usage • Herbal Medicine  
• Body Immune System • Covid-19.



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### Introduction

In medicine, viruses are simple microorganisms that infect cells and may cause infectious diseases that need to be watched out for. COVID-19 cases are increasing in number from time to time, so it requires our attention. Several new variants of the SARS-CoV2 virus have been found such as Alpha (B.117), Beta (B1.351), Delta (B.1.617) variants and a new variant of Covid-19, namely the B.1.1.529 variant which is popularly known as Omicron. The existence of a mutation in this variant will affect the diagnostic test (target gene S), there will be higher transmissibility, and resistance to neutralizing antibodies. It has been found to spread in many regions in Indonesia with a high risk of transmission and cause a decrease in vaccine efficacy (Burhan et al., 2022).

Several factors like diet, environment, daily lifestyle, age, stress, and hormones can affect the immune system and make people more susceptible to disease. Currently, many drugs or supplements derived from plants can work to boost the immune system. Substances that can modulate or modifies the immune system to help the body respond to a disease or illness are called immunomodulators. Immunomodulators are compounds generally consisting of immunostimulants and immunosuppressants (Siregar, 2015).

The Ministry of Health of the Republic of Indonesia issued circular number: 02.02/IV.2243/2020 concerning the use of



traditional medicines for health care, disease prevention, and health care. In order to empower and encourage the active role of the community to develop traditional health, it is necessary to direct the community to carry out health care independently and correctly through the utilization of medicinal plants in the form of herbs, such as standardized herbal medicines (OHT) and phytopharmaca. The use of these traditional medicines has been recommended as an effort to maintain health, as well as to prevent and treat various mild to chronic diseases, and provide health care, especially during the public health emergency and/or the corona virus disease 2019 national disaster (Covid-19) (Kemenkes RI, 2020). Based on the description above, the researcher was interested in knowing the use of herbal medicine to maintain body immune system at the University of August 17, 1945 Jakarta.

## Materials and Methods

### Time and Place of the Study

This research was conducted at the 17 August 1945 University in Jakarta which is located at Jalan Sunter Permai Raya, North Jakarta. Data collection was carried out during february until april 2022.

### Respondents

Respondents who were enrolled in this study were all members of the University of August 17, 1945 Jakarta.

### Sampling Technique

The research employed a descriptive method as the design in which the data collection is structured from primary data, namely in the form of a questionnaire (Nazir, 2005). The questionnaire in this study contained questions regarding the description of the use of traditional medicine at the University of August 17, 1945 Jakarta. The sampling technique used was the purposive sampling method, which is a sampling technique with certain criteria. The formula used to determine the sample size was the Slovin's formula, given as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where n is the sample size number, N is population size in a region, and e is margin of error to be decided by the researcher, in this study, margin of error was the percent deviation (10%). The total population respondents involved was all students, staff, and lecturers at the University of 17 August 1945 Jakarta, which was around 2211 people. By applying purposive sampling technique, the samples obtained were only 95 people. Before the questionnaires were later distributed to the academic community of the University of August 17, 1945 Jakarta, they were first tested for validity and reliability tests.

Validity test was carried out to show the level of ability of an instrument in measuring what is to be measured so validity test gave meaning to the test scores (Ariyanta, 2014). After carrying out the validity test, the reliability test was then assessed. Reliability refers to how consistently a method measures something. If the same result can be consistently achieved by using the same methods under the same circumstances, the measurement is considered reliable (Setiawan and Rusdiansyah, 2016).

### Data Analysis

The data obtained from each questionnaire question was collected and then scored using the Guttman scale. The highest score for one question was one, the number of questions is 10, the highest score of all questions is 10. Correct knowledge is given a score of 1 and incorrect knowledge is given a score of 0. Respondents have a "good" level of knowledge if the percentage is 76-100%, the level of knowledge is "fair" if the percentage is 56-75% and the level of knowledge is "poor" if the percentage is <56% (Figure 1) (Nursalam, 2008).

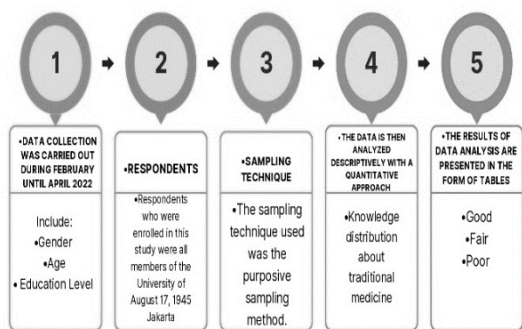


Figure 1. Flowchart Methodology

**Results and Discussion**

From the results of research conducted at the University of August 17, 1945 Jakarta regarding the use of traditional medicine to maintain immune system using a questionnaire, the

researcher found that the habitual behavior of consuming herbal medicine is influenced by many factors, both direct, such as knowledge and attitudes, and indirect by internal and external factors of society.

The existence of herbal medicine as a traditional medicine had experienced ups and downs, where there was a lot of inaccurate information about herbal medicine due to people's insufficient knowledge. Internal and environmental factors such as age, gender, and education level, may have an indirect effect on the people habit of using herbal medicine. The results of the characteristics of respondents based on gender, age, and level of education can be seen in table 1.

**Table 1.** Respondents' characteristics based on gender, age, and education level

No	Factors	Information	Total	Percentage (%)
1	Gender	Male	51	53,68
		Female	44	46,32
2	Age	18 - 25	32	33,68
		26 - 45	39	41,05
		46 - 65	24	25,27
3	Education level	Elementary	0	0
		Junior High School	5	5,26
		Senior High School	30	31,58
		Diploma 3	7	7,37
		Bachelor Degree	40	42,10
		Master Degree	11	11,58
Doctoral Degree	2	2,11		

Based on the respondents' characteristics (gender, age, and education), table 1 illustrate that the largest herbal consumers are male respondents (53.68%), aged between 26-45 years with a percentage of 41.05% and their education level on Bachelor degree totaled 40 people with a percentage of 42.10%. From this result, most of traditional medicine consumers are adults. This indicates that experience in using herbal medicine is sufficient. With enough experience, they can choose the right herbs to be consumed. This result is in accordance with the previous study of Zulkarni et al. (2019) which concluded that people who are more mature usually have a lot of experience in doing

treatment so they can choose herbal medicine. This result is also in line with the Ministry of Health of the Republic of Indonesia (2018) in the DKI Jakarta Regional Health Research which found that people over the age of 35 had a habit of consuming herbal medicine from traditional medicinal plant so that they were used to consume medicinal plants as a self-medication effort (Kemenkes RI, 2018). In line with the development of technology and their age, it causes greater enthusiasm to know all the phenomena that are happening. Research results from Baseline Health Research (2018) showed that the percentage of people consuming herbal medicine as a medicinal plant in self-medication

efforts has decreased as the level of education has increased, while the percentage of people using traditional health services (*pelayanan kesehatan tradisional or yankestrad*) has increased with the level of education increasing (Kemenkes RI, 2018).

Based on circular letter number: HK. 02.02/IV. 2243/2020 concerning the use of traditional medicines for health care, disease prevention, and health care, some examples of

the efficacy of medicinal plant ingredients to increase body immune system include herbal medicine 1 composition consisting of red ginger, lime, cinnamon, brown sugar, and water; herbal medicine 2 composition consisting of moringa leaves and water; herbal medicine 3 composition consisting of solo garlic, warm water, and honey. The results of the description of the types of herbal medicine use can be seen in table 2.

**Table 2.** Description of the types of herbal medicine use

No.	Type	Composition	Total	Percentage (%)
1	Herbal Medicine 1	Red ginger Lime Cinnamon Brown sugar Water	57	60,00
2	Herbal Medicine 2	Moringa leaves Water	24	25,26
3	Herbal Medicine 3	Solo garlic Warm water Honey	14	14,74
		Total	95	100

Further, in Table 2, the most common type of herbal medicine used is herbal medicine 1 with a percentage of 60.00% which has a composition of red ginger, lime, and cinnamon. Red ginger is often found so it is easy to get when needed. The presence of bronchodilatory activity in the active compounds inside the ginger plant can induce relaxation of the smooth muscles of the respiratory tract and can reduce cough duration (Mao et al., 2019).

Lime has the property of relieving menstrual pain, curing coughs and phlegm (Wardani et al., 2018). Cinnamon has a pharmacological effect as a fart laxative (carminative), sweat laxative (diaphoretic), antirheumatic, increases appetite (stomachic), and relieves pain (analgesic). Its chemical

properties are spicy, slightly sweet, warm and fragrant. Besides that, it can cure coughs, high blood pressure, gout, headaches, diarrhea and stomach ulcers (Al qamari et al., 2017).

In order to empower and encourage the active role of the community to develop traditional health, it is necessary to direct them to carry out health care independently (self-care/self-medication) and properly through the utilization of medicinal plants as traditional medicines in the form of herbs, such as standardized herbal medicines (OHT) and phytopharmaca. An overview results of the use of medicinal plants as a self-medication effort can be seen in table 3.



**Table 3.** Description of the use of medicinal plants as a self-medication effort

No.	Type	Composition	Total	Percentage (%)
1	Herbal Medicine 1	Red ginger Lime Cinnamon Brown sugar Water	75	78,95
2	Herbal Medicine 2	Moringa leaves Water	13	13,68
3	Herbal Medicine 3	Solo garlic Warm water Honey	7	7,37
		Total	95	100

The second finding is shown in table 3. It describes the use of medicinal plants as a self-medication effort. It was found that respondents chose herbal medicine 1 as medicinal plants as a self-medication effort with a percentage of 78.9%, herbal medicine 2 with a percentage of 13.7%, and herbal medicine 3 with a percentage of 7.4%. Self-medication is the act or process of medicating oneself especially without the advice of a physician or known as self-treatment. Self-medication was usually done to deal with various complaints and minor illnesses that many people experience such as fever, dizziness, pain, cough, stomach ulcers, diarrhea, skin diseases and so on (Kemenkes RI, 2010). In line with research by Fauziah et al., (2021) that people used traditional medicines because they were cheaper. Work is closely related to carry out self-medication because people must spend a lot of money to carry out conventional treatment

so that they tend to turn to self-medication by applying traditional medicines to treat the symptoms of the disease they are suffering from. Relatively small side effects are the most commonly-mentioned reasons why herbal medicine is preferred as treatment because basically herbal medicine is made from natural ingredients and does not contain harmful chemicals.

During public health emergency and/or the 2019 Coronavirus Disease (COVID-19) national disaster, there is a need to increase support and collaboration across sectors and local governments, especially in providing information to the public regarding the use of medicinal plants in the form of Indonesian traditional medicine. An overview of recommending or giving herbal medicine to others for free can be seen in table 4.

**Table 4.** Description of recommending or giving herbal medicine to others for free

No.	Type	Composition	Total	Percentage (%)
1	Herbal Medicine 1	Red ginger Lime Cinnamon Brown sugar Water	48	50,53
2	Herbal Medicine 2	Moringa leaves Water	28	29,47
3	Herbal Medicine 3	Solo garlic Warm water Honey	19	20,00
		Total	95	100,00





The third finding is about an overview of recommending or giving herbal medicine to others for free. The results obtained in Table 4 are herbal medicine 1 with a percentage of 50.5%, herbal medicine 2 with a percentage of 29.5%, herbal medicine 3 with a percentage of 20%. On average, the respondents were most concerned in herbal medicine (1) because they were interested in letting everyone know that ginger had many benefits. For herbal medicine (2), only part of it is in demand because some people want to recommend it and some people do not. Herbal medicine (3) is less desirable because it is not certain that the person being offered likes single garlic as the ingredient of the herbal medicine. The increased use of traditional medicines may be due to government intervention through the promoting of native Indonesian medicines and cross-sectoral promotion of *toga* (Family Medicine

Parks) within the ranks of the Ministry of Health and the *PKK* (Family Welfare Development) driving team. The increase in the use of traditional medicine may also be related to the increase in the number of traditional medicine industries and small traditional medicine industries (Notoatmodjo, 2007).

Behavior is an action, activity, or process that can be influenced by the results of attitudes and knowledge possessed. According to Bloom's theory, human behavior is generally divided into 3 domains, namely knowledge (cognitive), attitudes (affective), and actions (psychomotor) and those domains are interrelated. From the theory explained, it can be concluded that knowledge and attitudes are included in the factors directly related to the behavior of herbal consumption habits. An overview of the knowledge distribution about traditional medicine can be seen in table 5.

**Table 5.** Knowledge distribution about traditional medicine

No.	Variable	Frequency	Percentage (%)
1	Good	68	71,58
2	Fair	17	17,89
3	Poor	10	10,53
	<b>Total</b>	95	100

The last finding is about an overview of knowledge about traditional medicine at the University of August 17, 1945 Jakarta. In table 5, it can be seen from 95 respondents, that those who have good knowledge is 68 people with a percentage of 71.6%, those who have fairly good knowledge are as many as 17 people with a frequency of 17, 9%, and those who have poor knowledge are as many as 10 people with a frequency of 10.5%. Therefore, it can be concluded that the level of knowledge about traditional medicine at the University of August 17, 1945 Jakarta is good. According to Notoatmodjo (2003), attitude is a reaction or response of someone who is still closed to a stimulus or object. Attitude is not yet an action, but it is a predisposition to a behavior, so that a positive attitude may not be manifested in real action (Soekidjo, 2003). Attitude will be followed or not followed by action according to experience. Drinking experience factors may influence the decision to consume herbal

medicine for health. This was proven by the fact that 43% of respondents who expressed a positive attitude towards herbal medicine reception did not consume herbal medicine regularly.

### Conclusion

The use of herbal medicine to increase body immune system was found to be an average based on gender, the majority of male as much as 53.70%, in the age category (26-45 years) of 41.00%, the highest level of education was Bachelor (S1) of 42.10%. Types of medicinal plants to increase body immune system is red ginger (60.00%). Utilization of medicinal plants as a self-medication effort is 78.90%. Respondents recommend or give these herbs to others for free as 50.50%. The level of knowledge about traditional medicine at the University of August 17, 1945 Jakarta was good, with 68 people (71.60%) chose it. Most respondents use herbal medicine with the basic

ingredient of red ginger as an immune booster. The importance of this research in the use of traditional medicine to maintain body immunity in preventing Covid-19 is expected to add to the knowledge of traditional medicine at the University of August 17, 1945 Jakarta and so that in-depth research can be developed regarding the bioactive compounds of each of these plants to be developed as phytopharmaca.

### Compliance with ethical standards

#### Conflict of interest

The authors declare that they have no conflict of interest.

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