

Knowledge of Medicinal Plants as Popular Medicine in Bendan Duwur Community, Semarang City

Fadly Husain^{1,*} Hartati Sulistyono Rini², Baiq Farhatul Wahidah³, Nur Eka Elistya⁴,
Luthfi Nur Amelia⁵, Rochayani⁶

^{1,2,4,5,6}Department of Sociology and Anthropology, Faculty of Social Sciences, Universitas Negeri Semarang, Indonesia

³Department of Biology, Faculty of Science and Technology, Universitas Islam Negeri Walisongo Semarang, Indonesia

*Corresponding author. Email: fadlyhusain@mail.unnes.ac.id

ABSTRACT

Popular medicine is one of the important sectors in the treatment system in a society. Before deciding to go to the available health services, the community will usually try to cure their illnesses with materials available at home. One ingredient that is widely used in popular medicine is medicinal plants. This medicinal plant is believed to have properties in curing diseases and maintaining health and fitness. This research was conducted in Bendan Duwur Urban Village in Semarang City, using qualitative methods. Observation and interview techniques were applied in this research to obtain detailed data about the knowledge of medicinal plants in popular medicine. The results of this study indicate that there are several medicinal plants that are processed into an herb commonly used in curing diseases. Sources of knowledge of medicinal plants in the community also vary, knowledge transmitted from older generation, media, and others. With the setting of a research landscape in an urban area where there are densely populated settlements, people use flower pots to grow medicinal plants and utilize the narrow and vacant land left in their environment. This research is important because although various modern health services are available, people still use their popular knowledge in maintaining their health.

Keywords: medicinal plants, medicine, herbal, disease.

1. INTRODUCTION

It is widely understood that plants have quality in curing diseases. Various scientific studies have proven the ability of plants in the treatment of health problems. All ethnic groups in the world have knowledge about plants that can be used as medicine. Treatment using plants has historically been practiced for a long time until now. Society as the inheritor of knowledge is still applying it. However, at present, using plants as medicinal properties are only an alternative choice when people experience illness. According to the results of the 2018 Basic Health Research conducted by the Ministry of Health of the Republic of Indonesia, there were 44.3 percent of Indonesia's population still using traditional medicine and of that percentage there were 31.8 percent who used their own ingredients. The amount includes herbs made from plants [1].

The experience and knowledge of medicinal plants in a community can be understood by looking

at the local health culture system. According to Kleinman [2], there are at least three health service sectors in society namely, the professional, the traditional, and the popular health sectors. The professional health sector is also commonly referred to as modern health services that are regulated and implemented by work organizations according to the health and medical profession. The second sector is health services carried out by people who have knowledge and expertise in traditional medicine. In Java, for example, people who have this knowledge are commonly referred to as *dukun* [3]–[5]. The latter is a popular sector in which health services are carried out by individuals and families also see [6]. Local knowledge about the use of plants as medicine in a community appears in the last two sectors, namely the folk medicine sector and family-based health care [7]. This research is more focused on the knowledge of medicinal plants used in the family both as a medicine for the purpose of curing diseases and as a supplement to keep the body healthy. This is because the family is the first place to ask or lay referrals if someone has a

health problem [8]. Some people will usually decide to treat independently at home first, before deciding to continue to other health services. Diseases that are usually cured in this popular treatment are health problems that are still considered mild. It is at this home health services that the medicinal plants are usually used.

To understand the use of medicinal plants by society, we need a knowledge called ethnobotany. This is a multidisciplinary study that connects anthropological knowledge particularly one that discusses ethnic groups and their culture, and botany that specifically studies plants. The study was pioneered first by a scientist named John Harshberger who mentioned it as a study of how ethnic groups used plants traditionally in their daily lives [9]. Although Harshberger introduced ethnobotany for the first time, the father of ethnobotany is Richard Schultes because it is in his hands that studies of human interaction with plants are growing and widely known in the scientific community. His research is very much contributing new knowledge in the medicinal plant ethnobotany, especially in the Amazon Region.

Currently, the study of ethnobotany of medicinal plants not only takes the setting of research in rural areas but also in urban areas. However similar studies have not been done in urban locations [10]. Several studies have been carried out in European city settings such as the Quave et al [11] that explores the use of natural products from plants as an alternative treatment in society. Two other studies are research conducted by Ceuterick et al [12], [13] which focuses on how migrants from outside Europe continue to choose to use medicinal herbs as a tradition brought from their respective countries.

Ethnobotany research of medicinal plants, in particular by exploring aspects of their knowledge is still very important to do. Indonesia as a country that has abundant biodiversity has enormous potential that can be utilized for the welfare of society. This research is also a media in recording the knowledge so that it prevents the loss of knowledge of medical culture as one of the national identities.

Utilizing medicinal plants in the community is important because the drug can be consumed naturally without harmful additives. Economically, this plant product is cheap because it can be grown around the home environment or bought in traditional markets at affordable prices [14]. With the quality contained in it, scientists claim that medicinal plants can increase immunity. Increased immunity in the body can prevent various infectious diseases such as viruses.

The purpose of this study is to understand the ethnobotany knowledge of medicinal plants that are used as family-based medicine (popular medicine) in Bendan Duwur, Semarang.

2. METHODS

This research was conducted during June and July 2020 in RW 4, Bendan Duwur Village, Gajahmungkur Sub-District, Semarang City. The qualitative method was used in this study because it was considered as an effective way of understanding ethnobotany knowledge and family medicine in society.

The participants in this study were residents of RW 4 within the administrative area of Bendan Duwur Village. Housewives who became the main informants numbered 5 people while 4 others were community leaders. Housewives are chosen as informants because mothers usually have responsibilities in domestic affairs, including as a place of initial reference in family medicine. The informants in this study were considered to have knowledge about medicinal plants and also use them in the family. In addition, they also actively participated in growing medicinal plants in their environment.

The main data was obtained from the research field through informant interviews and observation of medicinal plants used or planted by informants. Data collected includes knowledge of medicinal plants, ethnobotany data such as local names of plants, types and uses of these plants, parts of plants used, methods used in the use of medicinal plants, and how to obtain them.

To obtain research data, researchers used guidelines that were utilized during the conduct of the interview and observation process. Another instrument used in this study was the use of a voice recorder to make it easier to record the interview process and photo cameras to capture the atmosphere of the community and the location of the study.

3. RESULT AND DISCUSSION

3.1. Identification of Knowledge About Plants

The results of the study found that there are 43 types of plants that are used as medicinal herbs in family medicine practice. The list of these plants can be seen in the table below:

Table 1. Medicinal Plants

Vernacular name	Botanical name	Used parts	Medicinal uses
Kitolod	<i>Hippobroma longiflora</i>	Clear liquid	Sore eyes
Kumis Kucing	<i>Orthosiphon aristatus</i>	Leaf	Diabetes
Tapak Doro	<i>Catharanthus roseus</i>	Leaf	Diabetes
Daun Ungu	<i>Graptophyllum pictum</i>	Leaf	Haemorrhoid
Jinten	<i>Trachyspermum roxburghianum</i>	Seeds	Seasoning but also good for body
Cabe	<i>Piper retrofractum</i>	Fruit	Body aches
Puyang	<i>Zingiber zerumbet</i>	Leaf	Body aches
Adas Pulo Waras	<i>Foeniculum vulgare</i>	Leaf	Seasoning but also good for body
Jarak	<i>Ricinus communis</i>	Leaf	Fever
Karet Kebo	<i>Ficus elastica</i>	Leaf	Rheumatic
Pepaya Jepang	<i>Cnidioscolus aconitifolius</i>	Leaf	Increase breast milk for mother
Sambiroto	<i>Andrographis paniculata</i>	Leaf	Increase appetite
Kenikir	<i>Cosmos sulphureus</i>	Leaf	Itchy skin, pimple
Dlingo	<i>Acorus calamus</i>	Rhizome	<i>Sawanan</i> medicine
Bengle	<i>Zingiber cassumunar</i>	Leaf	<i>Sawanan</i> medicine
Sambang Darah	<i>Excoecaria cochinchinensis</i>	Leaf	Asthma
Lavender	<i>Lavandula</i>	Leaf	Repel Mosquitoes
Katuk	<i>Sauropus androgynus</i>	Leaf	Increase breast milk for mother
Pyahong	<i>Anredera cordifolia</i>	Leaf	Wound medicine
Jambu	<i>Psidium guajava</i>	Leaf	Diarrhoea
Bidara	<i>Ziziphus mauritiana</i>	Leaf	Cast out evil spirits
Kencur	<i>Kaempferia galanga</i>	Rhizome	Herbal drink
Jahe	<i>Zingiber officinale</i>	Rhizome	Herbal drink, Prevent from COVID-19
Okra	<i>Abelmoschus esculentus</i>	Leaf	Joints problem
Keji beling	<i>Strobilanthes crisper</i>	Leaf	Kidney
Gempur Batu	<i>Ruellia napifera</i>	Leaf	Kidney
Pegagan	<i>Centella asiatica</i>	Leaf	Cough
Temulawak	<i>Curcuma zanthorrhiza</i>	Rhizome	Herbal drink
Mint	<i>Mentha longifolia</i>	Leaf	Cough
Kamboja	<i>Plumeria</i>	Flower	Tooth ache
Pandan	<i>Pandanus amaryllifolius</i>	Leaf	Seasoning but also good for body
Serai	<i>Cymbopogon citratus</i>	Whole plant	Repel Mosquitoes
Ketela Pohon	<i>Manihot esculenta</i>	Leaf	Low blood pressure
Sirih	<i>Piper betle</i>	Leaf	Genital problem for woman
Pepaya	<i>Carica papaya</i>	Leaf	Increase appetite
Koro Keling	<i>Murraya koenigii</i>	Leaf	Seasoning but also good for body
Lidah Budaya	<i>Aloe vera</i>	Fruit	Wound medicine, skin problem
Salam	<i>Syzygium polyanthum</i>	Leaf	Uric acid

Vernacular name	Botanical name	Used parts	Medicinal uses
Sirsak	<i>Annona muricata</i>	Leaf	Uric acid
Kersen	<i>Muntingia calabura</i>	Leaf	High blood pressure
Kelor	<i>Moringa oleifera</i>	Leaf	High blood pressure
Insulin	<i>Smalanthus sonchifolius</i>	Leaf	High blood pressure
Kunyit	<i>Curcuma longa</i>	Rhizome	Herbal drink, seasoning but also good for body

In table 1, it can be explained that the knowledge and utilization of plants by the Bendan Duwur community is very varied. It begins with knowledge of the types of plants used, in the forms of shrubs, herb stem plants, tree plants and grass plants. The majority of the use of this plant is on certain parts that are understood to have substances that are useful for the body, namely the flowers, leaves, seeds, fruit and rhizomes.

Each plant has properties in curing the disease, but if classified, the consumption of medicinal plants practiced by the community is intended to cure problems in certain organs such as skin, eyes, teeth, digestive tract, kidneys and lungs. Some informants mentioned that consumption of ginger (*Zingiber officinale*) can ward off COVID-19 disease which normally attacks the human lung organs.

Besides, there are plants that function to treat special diseases of adults such as gout, diabetes, high blood pressure, and aches, such as cat's whiskers (*Orthosiphon aristatus*) and *tapak doro* (*Catharanthus roseus*) for diabetics. Specifically, for maternal and child health, there are some commonly used plants. For breastfeeding mothers, there is *katuk* (*Sauropus androgynus*) and Japanese papaya (*Cnidioscolus aconitifolius*). Betel plant species (*Piper betle*) is understood to be very effective in maintaining the female health.

In Java, there is a local disease which is commonly suffered by babies which are commonly referred to as sawan diseases. Sawan is a condition in which a baby experiences pain for no apparent reason with signs and symptoms of crying loudly, looking hungry and uneasy. Society usually connects this disease due to interference from fine creatures. Bendan Duwur people usually treat this disease by using two types of plants, namely Dlingo (*Acorus calamus*) and Bengle (*Zingiber cassumunar*). Both of these plants are usually crushed and rubbed on the baby's body. After being swiped several times, the baby will gradually get better. Another plant that is understood by the community to be able to expel evil spirits that will enter the body and interfere with the health of the occupants of the house is *bidara* (*Ziziphus mauritiana*).

3.2. Food As Medicine

Plants used to cure a disease are generally used in the form of fresh plants. This plant can be consumed directly after being pounded or sliced, but it can also be through a cooking or boiling process. After the boiling process, the boiled water is usually taken as medicine. Even so there are some plants that are considered good for health, but it does not need to be processed, instead it is made as a daily food. The example of plants medicine used as food is cumin (*Trachyspermum roxburghianum*), *Adas pulo waras* (*Foeniculum vulgare*), turmeric (*Curcuma longa*), *pandan* (*Pandanus amaryllifolius*), *Moringa* (*Moringa oleifera*) and okra (*Abelmoschus esculentus*).

3.3. Plants Availability

Most of the medicinal plants consumed by people in Bendan Duwur are plants that are deliberately planted around the house. These plants are usually planted in the yard of the house. In addition, the community also planted independently by utilizing the empty spaces around the house such as on the side of the alley and even on the edge of the toll road. Plants planted on the side of the alley usually use a rather small container, so it does not interfere with road traffic. In addition, the community also planted using the vertical garden model (verticulture) on the road fence.

Plant care is carried out in mutual cooperation. The community actively participates in taking care of the plants by scheduling tasks to water the plants in the morning and afternoon. Plants can be used by people whenever they need. The challenge faced by the community in growing medicinal plants around the house is if a long summer occurs. Although plants have been treated well, but some types of plants are not strong enough to survive in hot weather.

4. CONCLUSIONS

This study aims to understand deeply how people's knowledge about medicinal plants and home remedial practices using these medicinal plants. Identification is important to see in detail the plants that are used. There are 43 types of plants that are used and are distinguished in detail according to the

part of the plant used, the efficacy, and also how to prepare it. As a community living in an urban setting, Bendan Duwur residents utilize unused land to grow medicinal plants. The goal is that plants can be accessed more easily and cheaply. It is also a means of greening and a media for healthy interaction for community members.

REFERENCES

- [1] Balitbangkes-Kemkes-RI, "Laporan Nasional Riskesdas 2018," Jakarta, 2019.
- [2] A. Kleinman, *Patients and Healers in The Context of Culture an Exploration of The Borderland between Anthropology, Medicine and Psychiatry*. California: University of California Press, 1980.
- [3] J. W. Nourse, "The meaning of 'dukun' and allure of Sufi healers: how Persian cosmopolitans transformed Malay-Indonesian history," *J. Southeast Asian Stud.*, vol. 44, no. 3, pp. 400-422, 2013.
- [4] C. Geertz, "Curing, sorcery and magic in Javanese town," in *Culture, disease and healing: studies in medical anthropology*, D. Landy, Ed. New York: MacMillan, 1977.
- [5] M. Woodward, *Java, Indonesia and Islam*, vol. 3. Heidelberg London New York: Springer, 2011.
- [6] A. Waldstein, "Popular Medicine and Self-Care in a Mexican Migrant Community: Toward an Explanation of an Epidemiological Paradox," *Med. Anthropol.*, vol. 29, no. 1, pp. 71-107, 2010.
- [7] M. Trojan-Rodrigues, T. L. S. Alves, G. L. G. Soares, and M. R. Ritter, "Plants used as antidiabetics in popular medicine in Rio Grande do Sul, southern Brazil," *J. Ethnopharmacol.*, vol. 139, no. 1, pp. 155-163, 2012.
- [8] J. Young, "Illness behaviour: a selective review and synthesis," *Sociol. Health Illn.*, vol. 26, no. 1, pp. 1-31, 2004.
- [9] A. M. Abbasi, M. A. Khan, M. Ahmad, and M. Zafar, *Medicinal Plant Biodiversity of Lesser Himalayas-Pakistan*. New York: Springer, 2012.
- [10] M. Emery and P. Hurley, "Ethnobiology in the city: embracing the urban ecological moment," *J. Ethnobiol.*, vol. 36, no. 4, pp. 807-819, 2016.
- [11] C. L. Quave, M. Pardo-de-Santayana, and A. Pieroni, "Medical Ethnobotany in Europe: From Field Ethnography to a More Culturally Sensitive Evidence-Based CAM?," *Evidence-Based Complement. Altern. Med.*, vol. 2012, p. 156846, 2012.
- [12] M. Ceuterick, I. Vandebroek, B. Torry, and A. Pieroni, "Cross-cultural adaptation in urban ethnobotany: The Colombian folk pharmacopoeia in London," *J. Ethnopharmacol.*, vol. 120, no. 3, pp. 342-359, 2008.
- [13] M. Ceuterick, I. Vandebroek, and A. Pieroni, "Resilience of Andean urban ethnobotanies: A comparison of medicinal plant use among Bolivian and Peruvian migrants in the United Kingdom and in their countries of origin," *J. Ethnopharmacol.*, vol. 136, no. 1, pp. 27-54, 2011.
- [14] F. Husain, F. Fajar, D. Sary, and E. Yuniati, "The Study of Jamu Plants Ethnobotany in Homegarden and its Implications to Medicinal Plant Conservation in Semarang," in *Proceedings of the 1st International Conference on Environment and Sustainability Issues*, 2019.