

## Short Communication: Do women have a piece of traditional knowledge of medicinal plants? A case study around Jambi Urban Forest, Indonesia

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**Abstract.** Novriyanti N, Nursanti N, Wulan C. 2021. Short Communication: Do women have a piece of traditional knowledge of medicinal plants? A case study around Jambi Urban Forest, Indonesia. *Asian J Ethnobiol* 4: 115-119. Gender, especially women, significantly affect knowledge, especially maintaining knowledge and practice of medicinal plants. But the question, also will be the research aims is, do they know medicinal plants and grow them themselves in their yards? Data was collected using open and closed interviews with families, including the village shamans. The results showed half of the women around Urban Forest know traditional medicinal plants. Women use 27 plants species to protect and heal their families from minor ailments. Some of the plants found around Urban Forest also plant in their yards; unfortunately, the number of traditional medicinal plant users decreases over time.

**Keywords:** gender knowledge, Muhammad Sabki Urban Forest, planting behavior, traditional medicine, urban forestry

### INTRODUCTION

Plants are one of the forest components with many benefits for the human body. Plants function as a source of energy-rich food to drive healthy body growth (van Holthoon 1999) and can be a healing option. Medicinal plants are the non-timber forest products that all types of forest management can utilize, either in protected, production, or conservation forests (Akiefnawati and Rahayu 2016). It also refers to the plant's function in healing.

In Indonesia, using plants as a healer has a long tradition, starting at the beginning of the 20th century. It has correlated with the World Health Organization (WHO) report that almost 80 percent of developing countries depend on wild plants to care for their health (Balick et al., 1996). Many research articles found that medicinal plants commonly used by people or ethnicity who live around the forest (Elagupillay 2009; Putri et al. 2014; Walujo 2008) or in Indonesia rural communities (Darusman et al. 2004; Katili et al. 2015; Roosita et al. 2008; Royyani and Rahayu 2010). For example, there were 344 plant species sold in traditional markets in North Sumatra (Silalahi et al., 2015). Communities in Maluku Seram Island utilize as many as 45 types of medicinal plants (Susiarti 2015). Suku Anak Dalam, who lives in Tabun Village, Tebo Regency, Jambi Province, utilizes as many as 39 traditional medicinal plants species (Indriati 2014). That medicinal plants also can be obtained from various locations, like yards (72

plants species), gardens (69 plants species), on the edge of rice fields (12 plants species), and riverside (9 plants species) (Nurjannah et al. 2015).

Rural communities and most urban populations in tropical Asia depend on plants as therapeutic agents daily (Balick et al. 1996; Novriyanti et al. 2021). In this case, women play an essential role, especially in maintaining the knowledge and practice of using medicinal plants, as commonly the forest resources management (Sujarwo et al. 2014). The meta-analysis result conducted by De Boer and Cotingting (2014) shows that almost 2000 different species of medicinal plants are still used to maintain the health of Southeast Asian women. However, there is no data on Indonesian women. Do the urban women in Indonesia behave and do the same practice as a rural community that depends on medicinal plants as a necessary treatment? Do the urban women know medicinal plants, and they plant by themselves?

Based on these findings, this study aims to explain knowledge of urban communities around Jambi's urban forest on medicinal plants. Do they grow it in their yard, and what types are they?. This research chose the Muhammad Sabki Urban Forest to study, and so far, the research conducted here has not reached the medicinal aspect. Another research done is the diversity and abundance of butterfly species (Rahayu and Basukiriadi 2012), epiphyte potential communities as one of the drivers on microclimate stability, biomass (Ihsan et al. 2015).

## MATERIALS AND METHODS

### Study area

This study surveyed Muhammad Sabki Urban Forest, one of the green open spaces in Jambi Province (Jambi's Urban Forest), for two months, from August until September. Muhammad Sabki Urban Forest has an area of about 11 hectares, which improves and maintains the micro-climate, the city's aesthetics, absorbs water, creates balance and harmony in the city's physical environment, and supports the conservation of Indonesia's biodiversity. The kind of vegetation there has been planted or naturally grown. Earlier vegetations are the rubber forest, Pteridophyta community, Fungi, Asteraceae, Bryophyta, Araceae, lianas, and plant saplings until the pole level. In these areas also found some medicinal plants which are known utilized on the world. Some of them are *Syzygium* spp., *Arcangelisia flava*, *Uncaria* spp., *Eurycoma longifolia*, *Coptosapelta flavescens*, and much more (Nursanti et al. 2018).

We chose three locations out of the residential unit, nearest to the administrative area of Mayang Mangurai village in Jambi City, to explore the women's knowledge on plants utilization. The group's study is on Muhammad Sabki Urban Forest (500-700 meters from the village). It takes 30 minutes to travel from this residential unit to the city center. Muhammad Sabki Urban Forest coordinates 103°34'52" up to 103°35'11" East Longitude and 01°39'08" up to 01°39'22" South Latitude. This study location is also close to the Public Health Center.

### Data collection and analysis

This research used open and closed combination interviews with 10 respondents and some informants. A research questionnaire guided the interview data. The stratification data resources, as follows: (i) The traditional village healers and birth attendants. Information about these traditional healers was traced using the snowball

sampling method. The informants were determined based on indigenous leaders, tribal chiefs, village chiefs, and other reliable sources (Katili et al., 2015). (ii) The family healers include a married woman in each family head (KK) residential unit. Married women are assumed to have more caring in their family healthiness (Sumarmiyati and Rahayu 2015). Women studied generally work as housewives. The number of women interviewed was bound in 10 persons because the data was saturated, and the interview was stopped if it had happened (Morse 2015).

### Data analysis

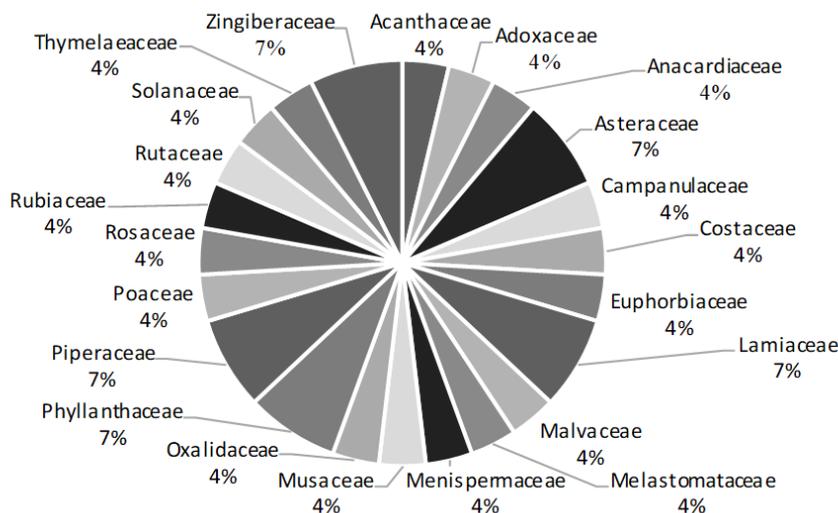
Data has been collected, analyzed quantitatively by descriptive statistics to describe various plants used by urban women and their characteristics. Then data is analyzed by qualitative to explain categorization already used by urban women around Muhammad Sabki Urban Forest.

## RESULTS AND DISCUSSION

### Result

As a common, communities in Jambi Province come from various ethnicities, such as Malay, Java, Minangkabau, Batak, Sundanese, Chinese, and others. Our survey identified as many as three ethnicities living around Jambi urban forest. The interviewed women mainly were Javanese (67%), Sundanese (17%), and Malay (16%). Most of them work as housewives.

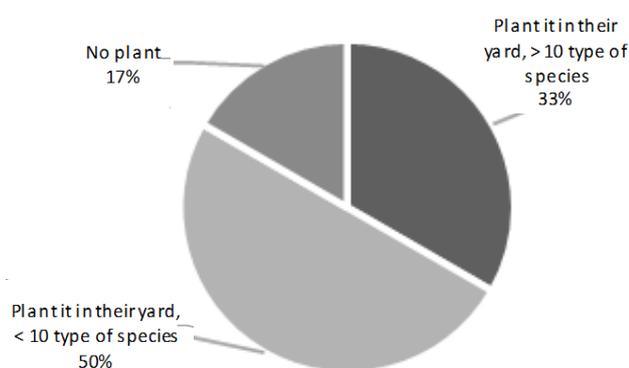
Studies conducted on married women show that half of the interviewed knew the benefits of medicinal plants around them. Women use 27 plants to heal his family (Table 1). These plants are categorized into 22 families; each family contains 1-2 plant species (Figure 1). Phyllanthaceae, Zingiberaceae, and Asteraceae are the top 3 types of medicinal plants found.



**Figure 1.** Family names distribution of plant species used as medicine by the community around Jambi Province Urban Forest, Indonesia

**Table 1.** Types of medicinal plants used by the community around Jambi Province Urban Forest, Indonesia

Kind of species		Family	Utility	
Local name	Scientific name		Bahasa	English
<i>Sambiloto</i>	<i>Andrographis paniculata</i>	Acanthaceae	<i>Obat panas, obat gatal-gatal</i>	Cough, dermatitis
<i>Daun kerak-kerak</i>	<i>Sambucus javanica</i>	Adoxaceae	<i>Obat rematik</i>	Rheumatic
<i>Mangga</i>	<i>Mangifera indica</i>	Anacardiaceae	<i>Obat imunitas tubuh</i>	Immunity
<i>Daun sambung nyawa</i>	<i>Gynura procumbens</i>	Asteraceae	<i>Obat Lelah</i>	Muscle pain
<i>Daun beluntas</i>	<i>Plucheacea folium</i>	Asteraceae	<i>Obat demam</i>	Fever
<i>Daun katarak</i>	<i>Isotoma longiflora</i>	Campanulaceae	<i>Obat mata katarak</i>	Eye disease
<i>Sedingin</i>	<i>Costus speciosus</i>	Costaceae	<i>Obat demam, obat kejang, obat untuk pasutri yang sulit punya anak</i>	Fever
<i>Daun betadin</i>	<i>Jatropha multifida</i>	Euphorbiaceae	<i>Obat gatal pada kulit; obat pencegahan infeksi</i>	Dermatitis
<i>Kembang gunung</i>	<i>Clerodendrum paniculatum</i>	Lamiaceae	<i>Obat pencahar</i>	Laxative
<i>Daun ati-ati</i>	<i>Plectranthus scutellarioides</i>	Lamiaceae	<i>Obat batuk, obat bisul</i>	Cough, dermatitis
<i>Kembang sepatu</i>	<i>Hibiscus rosa sinensis</i>	Malvaceae	<i>Obat panas</i>	Fever
<i>Senduduk</i>	<i>Melastoma malabthricum</i>	Melastomataceae	<i>Menghilangkan pahit pada pepaya; obat nyeri; obat peradangan</i>	Muscle pain, inflammation, injury, hemorrhage
<i>Brotowali</i>	<i>Tinospora cordifolia</i>	Menispermaceae	<i>Obat pusing</i>	Headache
<i>Jantung pisang kepok</i>	<i>Musa acuminata</i>	Musaceae	<i>Obat demam untuk anak</i>	Fever (for child)
<i>Kembang belimbing wuluh</i>	<i>Averrhoa bilimbi</i>	Oxalidaceae	<i>Obat hipertensi, obat flu untuk anak</i>	Hypertension, colds (for child)
<i>Meniran</i>	<i>Phyllanthus urinaria</i>	Phyllanthaceae	<i>Obat diabetes, kencing batu</i>	People with diabetes, urinary disease
<i>Sayur katu</i>	<i>Sauropus androgynus</i>	Phyllanthaceae	<i>Pelancar ASI pada ibu yang menyusui</i>	Asi stimulant
<i>Sirih</i>	<i>Piper betle</i>	Piperaceae	<i>Obat mata, obat kesehatan reproduksi wanita, obat sakit perut</i>	Eye irritation, postpartum remedy, stomach-sore
<i>Cabe jawa</i>	<i>Piper longum</i>	Piperaceae	<i>Obat nyeri, anti inflamasi, obat pilek/ flu</i>	Inflammation, injury, bleeding, colds
<i>Serai</i>	<i>Cymbopogon citratus</i>	Poaceae	<i>Obat hipertensi, obat pencernaan</i>	Hypertension, laxative
<i>Bunga mawar</i>	<i>Rosa sp.</i>	Rosaceae	<i>Obat campak, cacar, demam</i>	Fever, measles
<i>Mengkudu</i>	<i>Morinda citrifolia</i>	Rubiaceae	<i>Obat diabetis, batuk, obat radang lambung</i>	Diabetics, colds, maag
<i>Jeruk nipis</i>	<i>Citrus aurantifolia</i>	Rutaceae	<i>Obat batuk</i>	Cough
<i>Takokak</i>	<i>Solanum torvum</i>	Solanaceae	<i>Obat mata minus</i>	Eye disease
<i>Mahkota dewa</i>	<i>Phaleria macrocarpa</i>	Thymelaeaceae	<i>Sebagai detoksifikasi</i>	Detox
<i>Kunyit</i>	<i>Curcuma longa</i>	Zingiberaceae	<i>Obat peradangan, luka</i>	Inflammation, injury, bleeding
<i>Jahe</i>	<i>Zingiber officinale</i>	Zingiberaceae	<i>Obat batuk, masuk angin</i>	Cough, colds

**Figure 2.** Number of Women Around Urban Forest who plant medicinal plants in their yard.

The women around the Urban Forest of Jambi, Indonesia, did not collect the plant from the forest to heal their families. These plant species are generally planted around their home yard (83%). Some grew more than ten species (33%), and much grew less than ten species in their yard (50%) (Figure 2).

One of their best practices is using a mixture of the beneficial plant called *Jamu* (an extraction of some medicinal plants in liquid form produced by small-scale home industries) to maintain their health. Unfortunately, most of them prefer to visit public health centers (PUSKESMAS) or see a doctor to treat illness instead of drinking *Jamu*. Only as many as 17% of interviewed women said they prefer to plant it in the yard to heal their family. Especially women who have traditional views that traditional treatment (*Jamu*) is better than doctors or visiting the public health center.

## Discussion

The knowledge level about using plants as healers in the community, especially women, can affect their family's healing options. If the women or people in a community knew more utilization of plant species and its available in their yard, they might prefer to treat the disease by themselves at home. Since 2009-2014, the Central Statistics Agency (BPS) stated that women who have health complaints treat themselves with home remedies or do not visit health centers have declined (BPS 2016). This fact is similar to most people who live around Muhammad Sabki Urban Forest. They prefer to visit the public health center (PUSKESMAS) or see a doctor to treat their illness than to heal by themselves. It also means that people who use plants and traditional medicine are getting smaller.

Although many people are turning to modern medicine, plants still exist as an alternative medicinal treatment. Several plants found in this study can cure more than two diseases, such as *Piper betle*, *Curcuma longa*, *Piper longum*, *Melastoma malabathricum*, and *Morinda citrifolia*. Urban communities studied used medicinal plants to prevent or become first aid for minor diseases like fever, flu, stomach ache, and cough. Indeed, most diseases generally treated using medicinal plants are fever and cough. For example, in Iran (Mohsenzadeh et al. 2016) and India (Negi et al. 2011), fever has been commonly treated with medicinal plants.

However, first efforts using these medicinal plants may depend on their yard variety. Although there is a lack of medicinal plant species planted in the community yard, it still shows positive attitudes of urban communities, especially women, in improving the quality of life through the surrounding. Planting behavior may be related to their ethnicity. Our study show, 80 out of 87 % interviewed Javanese women who planted the medicinal plant in their yard. Javanese have been known to utilize 114 species of medicinal plants (Darusman et al. 2004). Javanese women have a good habit from their ancestors to plant anything, including medicinal plants (Sari et al., 2015). Besides that, the city's limited homeward area may also influence; they grow only the most valuable species. The people who live closest to the forest tend to possess fewer medicinal plants in their yard because they are available nearby (Kujawska et al., 2018).

Unfortunately, our findings show that most women interviewed declare species planted in the community yard such as Kembang gunung (*Clerodendrum paniculatum*), senduduk (*Melastoma malabathricum*), Sedingin (*Costus speciosus*), Daun kerak-kerak (*Sambucus javanica*), and Kembang belimbing wuluh (*Averrhoa blimbi*) are not from the urban forest area. But, another research (by Nursanti et al., 2018) showed that these five plants were found in Muhammad Sabki Urban Forest. Based on this situation, it is implied that the community of medicinal plants in their yard can be spread up into conservation areas, which is Muhammad Sabki Urban Forest or vice versa. With the community's existing conservation in the community's yard, there are opportunities to protect plant species within the conservation areas.

Some plants also are known to have multiple benefits besides being traditional medicines. There are aromatic plants like *P. betle*, *Citrus aurantifolia*, *Rosa* sp., *Cymbopogon citratus*; fruit-producing plant-like *Citrus aurantifolia*, *Mangifera indica*, *Musa acuminata*; vegetable plants like *Solanum torvum*, *Sauropus androgynous*, *Averrhoa bilimbi*, and herbs like *C. longa* and *Zingiber officinale*. Herbs are the most plant found in several places. Some herbs known as Ayurvedic medicine of India composed of *C. longa* and *Z. officinale* have been found in the community yard. These plants are used to treat some illnesses, especially for anorexia, chronic nausea, and change in body image (Negi et al., 2011). De Boer and Cotigting stated that *C. longa* and *H. rosa-sinensis* were commonly used by Asian people (De Boer and Cotigting 2014).

Using plants as traditional medicine is an effort to maintain the nation's cultural heritage so that it needs to be preserved (Dewoto 2007). But as some studies show that knowledge of environmental management, including biodiversity conservation, especially for forest restoration, is decreasing (Wulandari et al. 2021) from generation to generation, we assume that broad technological developments and less information may affect that. Some research reported that older women mostly own this local knowledge and practice medicinal plants (Chaniago and Siebert 1998; Royyani and Rahayu 2010). Meanwhile, most of today's generations have no sense of plant used as a healer (Sari et al. 2015). It also means that the number of people employed plants and traditional medicine is getting smaller.

Nevertheless, the research findings show that urban women around the city forest are still practicing one of the local pearls of wisdom in using medicinal plants, namely Jamu. Jamu is the extraction of medicinal plants in liquid form produced by small-scale home industries. It is one of the urban community's best practices for using a beneficially plant mixture. This condition is similar to other Indonesian rural people (Roosita et al. 2008) that use Jamu to maintain their health, especially during the Covid-19 pandemic, which forced the entire community to survive and increase immunity. Jamu is also a form of social empowerment among women in Indonesia (Torri 2012).

Factors that influence people using medicinal plants are the high cost or unavailability of chemical drugs and the trust that traditional medicines are safer than others (Dewoto 2007). However, using plants as a medical treatment should be conscientious because it could be dangerous, mainly if used to treat serious diseases, such as cancer, AIDS, and various chronic diseases (e.g., hypertension and diabetic) without supervised by a doctor. Developing utilization medicinal plants in urban communities, incredibly close to the forest, the communities yard or home garden is quite well by creating it as a good plant nursery.

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