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Ethnobotanical Study of Herbal Plants "Jamu" for Postpartum Mothers in Payudan Dundang Sumenep Regency

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Abstract

The society in the village of Payudan Dundang, Guluk-guluk sub-district, Sumenep still relied on plants as medicine to treat various types of diseases, particularly as herbal ingredients for postpartum mothers in order to expedite the healing process. This study aimed to identify the species of plants used for this purpose, determine the specific parts utilized, as well as explore the management and utilization of these traditional medicinal plants for postpartum mothers. This study employed a qualitative research design, utilizing interviews as the primary method of data collection. The collected data was then analyzed descriptively and grouped in tabular form. The findings of the study revealed a total of 13 plant species that were used and utilized as herbal remedies for postpartum mothers. These plants included Temulawak, Belungas, Mengkudu, Legundi, Senggugu, Kesembuen, Kunyit, Kencur, Jahe, Meniran, Mimba, Kumis Kucing, and Ceppeuh. The plant parts that were commonly used included leaves, rhizomes, and fruit. In the village of Payudan Dundang, it was reported that individuals consumed these herbal concoctions three times a day, typically in the form of tea. The benefits of these herbal remedies included restoring energy levels after childbirth, facilitating postpartum blood flow, alleviating post-delivery pain, enhancing breast milk production, and increasing the mother's appetite.

Keywords: Ethnobotany; Postpartum Mother; Herbal Medicine; Medical Plants

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INTRODUCTION

Madura Island is an area located in the province of East Java and one of the areas that has a diversity of natural resources in Indonesia. The Madurese ethnic/tribe is very rich in traditional knowledge in the field of traditional medicine which includes Indonesian herbal drink known as "jamu" (Azizah et al., 2023; Purwanti et al., 2020). For ages, the Madurese people have known and used plants as herbal medicines or traditional medicines such as "jamu", which are believed to be able to healing properties (Rahardjanto et al., 2019; Sudarmaji et al., 2019; Thibab et al., 2019). This heritage is well-documented, highlighting Madura's rich natural resources and traditional medicinal practices, especially in postpartum practices for maternal health (Fatmawati & Wijaya, 2021). The use of medicinal plants by the Madurese community remains a popular alternative treatment method to this day (Prasanti & Karimah, 2018; Satriyati et al., 2023). This deep ethnobotanical knowledge highlights their extensive understanding of the medicinal benefits of local plants. Such traditional practices are particularly important for postpartum mothers in Payudan Dundang, where herbal treatments are integral to postnatal care and recovery (Purwanti et al., 2023).

Medicinal plants are types of plants whose parts, such as roots, stems, bark, leaves, or excretions, can heal or alleviate pain (Larasati et al., 2019; Luthfi, 2022). Currently, the use of natural ingredients for medical treatments is growing rapidly. The development of the utilization of medicinal plants is highly promising, considering various supporting factors such as the rich and diverse biological resources available in Indonesia (Apel et al., 2023; Pitra et al., 2017). The history of traditional medicine utilizing medicinal plants has evolved into a cultural heritage of the nation, and the global "*back to nature*" movement has increased the market for herbal products (Gaol, 2019; Purwaningsih et al., 2019). Madurese practices has developed distinctive herbal formulations and techniques, particularly in the care of postpartum mothers (Fatmawati & Wijaya, 2021).

The knowledge of a particular community regarding the utilization of medicinal plants acquired through generations is known as ethnobotany (Andriani et al., 2020; Pitra et al., 2017). This ethnobotanical knowledge is particularly evident in Payudan Dundang, where traditional practices are part of cultural heritage and used in the care of postpartum practices (Purwanti et al., 2023). Ethnobotany is a field of study that explores the relationship between humans, plants, and the plant environment (Ristanto et al., 2020; Rukmana & Zulkarnain, 2022). The science of ethnobotany revolves around the utilization of plants by people in their surroundings as food, construction materials, cosmetics, medicine, and other applications that enhance human livelihoods (Saputra et al., 2019; Suproborini et al., 2018). Additionally, community knowledge in the utilization of plants also encompasses various aspects of life, including health, economic, cultural, and religious needs (Krisnawan et al., 2021; Mutaqin et al., 2018; Rukmana & Zulkarnain, 2022). Ethnobotany provides deeper insights into how various cultures utilize plants in daily lives and lead to the discovery of new medicinal compounds and innovative uses of natural resources (Balick & Cox, 2020).

People in Payudan Dundang Village have been using biodiversity as a potion for centuries to treat various diseases. The use of medicinal plants used by the Payudan Dundang community is widely used as herbal medicine “jamu” for postpartum mothers, such as ginger, java turmeric, ginger, aromatic ginger (Jubaidah et al., 2023). However, research on this matter has not been carried out seriously, especially in Payudan Dundang Village. Therefore, there is a need for research on the ethnobotanical knowledge of the community in the village of Payudan Dundang regarding the utilization of medicinal plants as herbal medicine “jamu” for postpartum mothers.

As previous study by Sayuti & Atikah (2023) stated that Central Statistic Agency indicates that most residents used traditional medicine but there has been little attention given to herbal medicine, in this case are among breastfeeding mothers in Jogonalan. By that there’s a need for focused research on the usage patterns of herbal medicine in specific regions of Indonesia. The aim of this research article is to identify the types of plants, determine the utilized parts, and discover the management and utilization of these plants as traditional medicinal herbs for postpartum mothers. With this research, it is hoped that it will be known and can be passed on to the next generation and become the basis for subsequent research such as phytochemistry, physiology and related agencies in the preservation of medicinal plants.

METHOD

The type of research used is qualitative. The research design used is ethnobotanical study. The research was carried out in Payudan Dundang Village, Sumenep Regency, Madura in Figure 1. The selection of informants consisted of local community members who were knowledgeable about traditional medicinal plants used for postpartum mothers, the community that uses or consumes postpartum herbal medicine, with no age limits. Data collection was obtained through interviews with the people of Guluk-Guluk District to find out the types of plants, local names, parts used, where they grow, processing and use of medicinal plants for postpartum mothers using a questionnaire. The interview process involves visiting the people’s homes, with a total of 10 respondents, each interview last for about 5 until 10 minutes. The

questionnaire is part of the interview process, outlining details about the plants used, the specific parts utilized, and the perceived benefits or effects on the body after consuming the herbal medicine. The data obtained was then analyzed descriptively qualitatively and grouped in tabular form including plant types, local names, scientific names, parts used, sources of acquisition, contents and benefits of the medicinal plants. The analysis used to ensure the collected data is thematic analysis, by systematically identifying and interpreting patterns and themes in the data. The location for this research is shown in Figure 1.

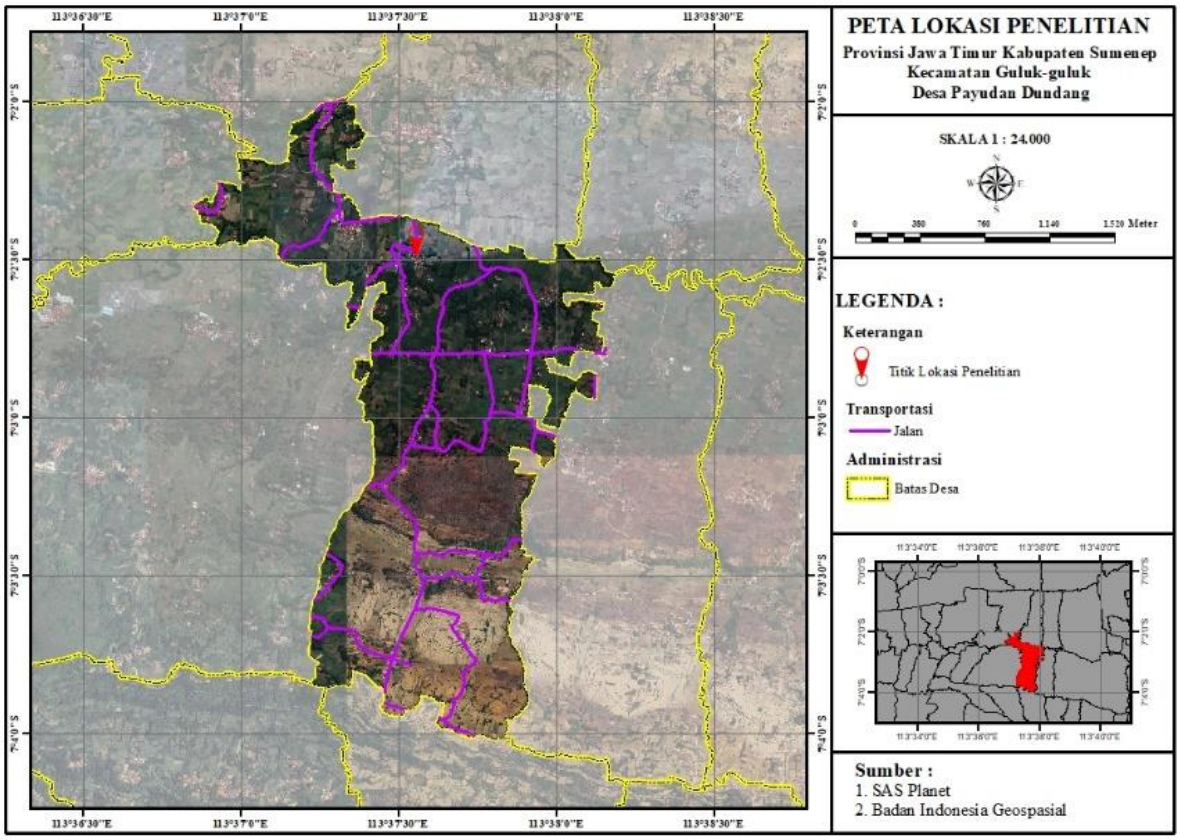

Figure 1. Research Location Map in Payudan Dundang Village

RESULTS AND DISCUSSION

This research was conducted in Payudan Dundang Village, one of the 12 villages situated within the Guluk-Guluk sub-district of Sumenep regency. The majority of the population in Payudan Dundang Village is of Madurese ethnicity. The Madurese are known for their distinctive customs and traditions, as well as a unique language and culture (Suyanto, 2024). Habits that are still considered traditional can be seen in the use of plants as herbal medicine "jamu" for postpartum mothers by the people of Payudan Dundang Village. This culture is passed down from generation to generation and it is believed that plants can be used as herbal medicine "jamu" for postpartum mothers by the local community. It is believed that the surrounding community utilizes plants as medicine for certain ailments, especially in aiding the recovery of postpartum mothers, which is commonly referred to as ethnobotany. This practice is extensively documented in several studies, such as the use of wild plants in medicinal foods for maternal postpartum recovery among the Kasepuhan Community by utilizing a total of 83 plant species from 34 different families (Mulyanto et al., 2024). The types of plants used are as in Table 1.

Based on data Table 1, thirteen plants species have been identified, divided into seven families, including one of the *Verbenaceae* family, two of the *Lamiaceae* family, two of the *Rubiaceae* family, one of the *Asteraceae* family, four of the *Zingiberaceae* family, one of the *Phyllanthaceae* family, one of the *Meliaceae* family, and one unidentified plant. Plants from

the *Zingiberaceae* family have the largest number, with four types, namely *Curcuma longa*, *Curcuma zanthorrhiza*, *Kaempferia galanga* and *Zingiber officinale*.

Table 1. The types of plants that have benefits in aiding the recovery of postpartum mothers.

Local Name	Scientific Name	Parts Used	Sources of Acquisition	Content	Benefits
Temulawak	*Curcuma zanthorrhiza*	Rhizome	Cultivation	Alkaloids, saponins, flavonoids, and polyphenols (Dzakiyah et al., 2019; Ramadhanti et al., 2022)	Enhancing breast milk production and facilitating breast milk flow (Ramadhanti et al., 2022)
Beluntas	*Pluchea indica*	Leaf	Wild nature	Flavonoids, saponins, tannins, alkaloids, and essential oils are potentially antibacterial sources. (Erwiyani et al., 2022)	As an antibacterial and to facilitate breast milk (Erwiyani et al., 2022; Zahroh et al., 2023)
Mengkudu	*Morinda citrifolia*	Fruit	Wild nature	Alkaloids, flavonoids, tannins, steroids, saponins, phenolics, xeronin, anthraquinones, damnacanthal, and scopoletin (Arniyanti et al., 2023; Yuliana et al., 2017)	Cell rejuvenation, prevention of cancer cell development, boosting body immunity and combanting infections, increasing appetite, activation enzymes, and regulation protein functions within cells (Arniyanti et al., 2023; Yuliana et al., 2017)
Legundi	*Vitex trifolia*	Leaf	Wild nature	Alkaloids, saponins, flavonoids, polyphenols, and essential oils (Nayaka et al., 2023)	Reducing pain and serving as an antibacterial (Wahyuni et al., 2020)
Senggugu	*Rotheca serrata*	Leaf	Wild nature	Terpenoids/steroids, phenolics, and flavonoids (Maulana et al., 2020)	As an antibacterial (Maulana et al., 2020)
Kesembuen	*Paederia foetida*	Leaf	Wild nature	Alkaloids, flavonoids, saponins, tannins, steroids/triterpenoids, and glycosides (Kusumastuti et al., 2022)	As an antioxidant and antibacterial (Kusumastuti et al., 2022)

Local Name	Scientific Name	Parts Used	Sources of Acquisition	Content	Benefits
Kunyit	*Curcuma longa*	Rhizome	Cultivation	Alkaloids, saponins, flavonoids, essential oils, and curcumin (triterpenoid) (Shofia et al., 2023)	Relieving pain, Enhancing breast milk production, and possessing antibacterial properties (Sayuti & Atikah, 2022; Shofia et al., 2023)
Kencur	*Kaempferia galanga*	Rhizome	Wild nature	Flavonoids, saponins, phenols, and essential oils (Shofiyani & Pratikna, 2020)	Enhancing breast milk production, reducing pain, antibacterial, and also stabilizing the psychological condition of the mother (Sayuti & Atikah, 2022)
Jahe	*Zingiber officinale*	Rhizome	Wild nature	Flavonoids, terpenoids, essential oils, and phenols (Azkiyah, 2020)	Enhancing breast milk production (Ariyanti et al., 2023)
Meniran	*Phyllanthus urinaria*	Leaf	Wild nature	Flavonoids, saponins, and phyllanthin (Wahyuni, Aliah & Semboh, 2021)	As an antioxidant, protecting cell structures, and Enhancing breast milk production (Wahyuni, Aliah & Semboh, 2021; Zahroh et al., 2023)
Mimba	*Azadirachta indica*	Leaf	Wild nature	Flavonoids, saponins, tannins, alkaloids, and terpenoids (Azizah et al., 2023; Saweng et al., 2020)	Antiseptic, anti-inflammatory, and antioxidant (Azizah et al., 2023)
Kumis kucing	*orthosiphon aristatus*	Leaf	Wild nature	Alkaloids, flavonoids, quinones, tannins, polyphenols, saponins, and steroids (Faramayuda et al., 2020)	As an antibacterial and repairing nerves in the genital area (Adiwibowo, 2020)
Ceppeuh	-	Leaf	Wild nature	-	-

The *Zingiberaceae* family of plants is a member of the ginger family which is often used by people to cure diseases and is combined with other plants as traditional herbal medicine "jamu" as a medicine to heal postpartum mothers. This is evidenced by the results of the interviews conducted. According to Wahidah et al. (2021), the *Zingiberaceae* family of plants is characterized by the presence of essential oils in their rhizomes, as well as bioactive

compounds such as saponins, quinine, flavonoids, and polyphenols, which are beneficial for medicinal purposes.

The community collects the plants available in Table 1 for medical needs in 2 ways, namely cultivation and from the wild nature. Cultivation refers to the systematic planting of plants on a regular basis to meet daily needs, especially in the production of traditional herbal medicine "jamu". Thus, the availability of plants as raw materials for making medicine or herbal medicine "jamu" is ensured without compromising the risk to the surrounding plant population or the wild nature.

The benefits that can be gained from cultivation include assured quality and quantity control of the plants. It is imperative to take into account the possible disadvantages and restrictions associated with cultivation. For example, if a single cultivar is widely used, genetic diversity may be lost, which could result in decreased adaptability and resilience to environmental changes. Furthermore, if cultivation takes the place of traditional methods, the sustainability of wild harvesting practices may be jeopardized, possibly upsetting regional ecosystems and cultural customs (Duta-Cornescu et al., 2023). Another advantage of gathering plants from the wild nature is the lower cost. However, proper management of natural resources is necessary to ensure that the population of plants in the wild nature is not disrupted, thereby preventing damage to the natural ecosystem. There are two types of plants cultivated by the Payudan Dundang community, namely *Curcuma zanthorrhiza* and *Curcuma longa*. In addition to these two plants, the community also gathers them from the wild nature.

Usually, the community of Payudan Dundang Village consumes herbal concoctions "jamu" three times a day, with a serving equivalent to a tea glass. Other preparations made by the community include sweet dishes made with *Curcuma zanthorrhiza* and *Curcuma longa* as flavoring or seasoning for cooking.

Table 2. Infomant Data

Participant	Plants Used	Benefits Reported	Frequency of Consumption
Mrs. Hasbiyah	*Morinda citrifolia, Curcuma zanthorrhiza, Vitex trifolia, Rotheca serrata, Paederia foetida, Pluchea indica, Curcuma longa, ceppeuh*	Restore energy, facilitate postpartum blood flow, relieve pain, enhance breast milk, increase appetite	Three times a day
Mrs. Zaitun	*Curcuma longa, Curcuma zanthorrhiza, Paederia foetida, Morinda citrifolia, Pluchea indica, tamarind, Azadirachta indica*	Enhance breast milk production, stop postpartum bleeding	Twice a day
Mrs. Izzatul Matufah	*Curcuma zanthorrhiza, Curcuma longa, Orthosiphon aristatus, ceppeuh, Morinda citrifolia, brown sugar, Paederia foetida, Pluchea indica*	Improve health, enhance breast milk production	Three times a day
Mrs. Hamimah	*Curcuma zanthorrhiza, Curcuma longa, Morinda citrifolia, Paederia foetida, Rotheca serrata, ceppeuh, Orthosiphon aristatus, brown sugar*	Feel fresh and healthy, enhance breast milk production	Three times a day

The researcher obtained information (Table 2) regarding the plant preparations used as herbal medicine "jamu" by mothers in Payudan Dundang village through interviews (Figure 2) as follows:

Figure 2. Interview with residents of Payudan Dundang Village

Through interviews from various sources, it was found that the process of plant preparation by the community of Payudan Dundang follows the same steps, as follows:

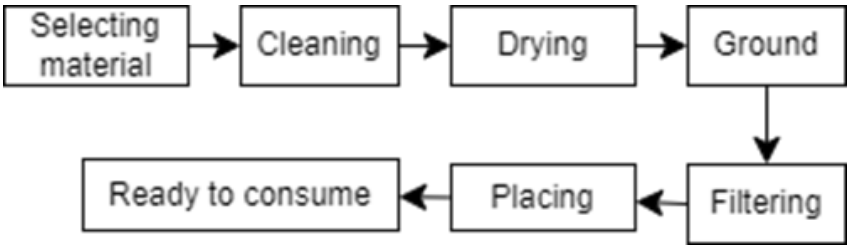

Figure 3. The process of plant preparation

As seen in Figure 3, the detailed process as follows:

(1.) Selecting good plant materials to be processed to ensure safety. (Plants used are all plants listed in Table 1)
(2.) After that, cleaning them thoroughly to remove any dirt adhering to the parts of the plants used.
(3.) Then, drying the plants thoroughly until they are completely dry.
(4.) Subsequently, once all the plants are dry, they are collectively ground until fine.
(5.) After being finely ground, they are then filtered.
(6.) After filtering, they are placed into bottles or storage containers, and
(7.) ready to be consumed with warm water.

This has become a common practice among the local community in utilizing plants for daily life as well as traditional medicine. The herbal concoctions "jamu" prepared by the community of Payudan Dundang village are believed to have many benefits, especially for postpartum mothers, including restoring energy after childbirth, regulating postpartum bleeding, alleviating postpartum pain, facilitating breastfeeding, and increasing the mother's appetite. Some plants that are used as herbal medicine "jamu", such as *Zingiber officinale* and *Curcuma longa*, have their own properties, including *Curcuma zanthorrhiza* which can be a natural antibiotic for the baby's body which enters through breast milk and *Curcuma longa*

contains curcumin which has the benefit of helping prevent endometriosis (Chyntaka, 2021). Endometriosis is a condition where tissue that normally lines the inside of the uterus grows outside the uterus.

The knowledge of processing plants into postpartum herbal medicine “jamu” in the community of Payudan Dundang village is passed down through generations via oral tradition. By establishing the medicinal qualities of these traditional remedies through research on their bioactive compounds, pharmacological effects, and clinical trials, scientific validation can help to bridge the gap between traditional knowledge and modern scientific understanding. This strategy offers potential new insights for healthcare innovations while simultaneously promoting sustainable use and conservation of medicinal plants and protecting cultural heritage. This serves as evidence that traditional communities possess skills in gathering and processing plants into herbal medicine “jamu” for postpartum mothers. Good plant processing requires both traditional and scientific knowledge with a community-based approach, and research is needed to ensure that plant use is considered appropriate, safe, and beneficial in meeting the needs of the community of Payudan Dundang Village, Guluk-Guluk District, Sumenep Regency.

CONCLUSION

The study highlights the various plant sources, preparation techniques, and purported health benefits of traditional herbal medicine, or "jamu," and emphasizes its cultural significance and practical application for postpartum care in Payudan Dundang village. Based on the research conducted, it was found that there are 13 types of plants that have benefits as herbal medicine “jamu” for postpartum mothers, namely Curcuma zanthorrhiza, Pluchea indica, Morinda citrifolia, Vitex trifolia, Rotheca serrata, Paederia foetida, Curcuma longa, Kaempferia galanga, Zingiber officinale, Phyllanthus urinaria, Azadirachta indica, Orthosiphon aristatus dan ceppeuh. The parts of the plants utilized as herbal medicine “jamu” for postpartum mothers are the leaf, rhizome, and fruit. The process of preparing plants into herbal medicine “jamu” for postpartum mothers involves combining several plants into one, then drying them, grinding them finely, filtering them into a fine powder, placing them in a container or bottle, and then they are ready to be consumed. The society of Payudan Dundang consumes the herbal concoction “jamu” three times a day, with a serving equivalent to a tea glass. The benefits of the plants as postpartum herbal medicine “jamu” include restoring energy after childbirth, regulating postpartum bleeding, alleviating postpartum pain, facilitating breastfeeding, and increasing the mother's appetite.

RECOMMENDATION

Further research on the ethnobotany of medicinal plants by the people of Payudan Dundang is needed to explore a wider range of medicinal plants and their uses, as well as to precisely determine their contents, even though some have already exist. In order to improve healthcare outcomes, more research should combine traditional knowledge of medicinal plants contemporary scientific methods to investigate a wider range of plant uses, clarify their bioactive compounds, optimize processing techniques for maximum efficacy, and establish safe dosage guidelines. Apart from that, further research is needed to determine the appropriate processing/consumption method to maximize the benefits of the plant content and determine the correct dosage so that it is safe for consumption.

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