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MEDICINAL PLANTS UTILIZATION BY MADURESE TRIBE IN MEKAR SARI VILLAGE, KUBU RAYA REGENCY, INDONESIA

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SUMMARY

Medicinal plants utilization as traditional medicines has undergone transfer from generation to generation by the ancestors. The following study aimed to collect information on traditional medicinal plants for maternity care by the Madurese tribe in Mekar Sari Village, Kubu Raya Regency, Indonesia. This research used a descriptive qualitative method with interviews, observation, and documentation to obtain information. Plant samples collection used a purposive sampling technique and informants based on specific criteria with a local traditional healer who uses medicinal plants for maternity care. The study recorded 13 different plant species of medicinal plants belonging to six plant families utilized for maternity care and better health. The medicinal plants, particularly of the family Zingiberaceae, commonly served for healing maternity care wounds, colostrum production, increasing body stamina, and improving appetite. The Madurese community in Mekar Sari Village still utilizes traditional medicines obtained from different plants for maternity care treatment. The application of medicinal plants for maternity care by the community also needs preservation as local knowledge.

Keywords: Medicinal plants, traditional medicine, Madurese tribe, maternity care

Key findings: The relevant research aimed to collect the information about medicinal plants used by the community of Mekar Sari Village, Kubu Raya Regency, Indonesia. The traditional medicines obtained through boiling various parts of the medicinal plants are beneficial for maternity care treatment and better health.

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INTRODUCTION

Indonesia is the second leading country for having the highest diversity of flora and fauna in the world (Setiawan, 2022). Kalimantan Barat is an important province in Indonesia, having tropical forests with various medicinal plants, mostly utilized by the community as traditional medicines (Wardhani, 2021). Beliefs prevail that medicinal plant species have medicinal properties used in curing numerous diseases and enhancing stamina (Adiyasa and Meiyanti, 2021). The medicinal plant utilization as traditional medicines by the community has become the local wisdom, passed from generation to generation by the ancestors (Iqbal *et al.,* 2022).

The Kubu Raya Regency, Indonesia, has the greater potential regarding knowledge on the use of medicinal plants in the village of Mekar Sari. One of the ethnic groups that inhabit the Mekar Sari Village area is the Madurese. The Madurese are immigrants who have settled there for quite some time. The Madurese people are influential in the areas they reside; this influence can be visible in various aspects of life, including traditions they still carry out (Iwan, 2021).

The Madurese people have special characteristics that have become a cultural tradition, namely, the practice of traditional medicine by consuming herbal remedies from medicinal plants to restore and maintain health (Muarif and Satriyati, 2023; Azizah *et al.,* 2023). According to Satriyati (2017), the Madurese people consume herbal medicine for medication purposes as well as a means of conveying messages to the community to maintain health according to ancestral advice. Madurese women still preserve and uphold local traditions, such as drinking traditional herbal prescriptions for medicinal purposes and health maintenance, such as after childbirth. This tradition of drinking herbal medicine, as socially and culturally constructed, continues to be practiced (Satriyati *et al.,* 2019).

Based on the interviews with traditional healers, it was evident that the Madurese community living in Mekar Sari Village, Kubu Raya Regency, Indonesia, still relies on various plants for medicinal purposes. The interviews also revealed mothers in Mekar Sari Village apply various medicinal plants continually to restore their good health after giving birth.

Childbirth is a crucial event for a mother. After giving birth, mothers usually try to restore their health and body condition through various treatments by traditional medicines (Matondang and Maimunah, 2021). The local herbs comprised various plant species, typically taken by drinking, pasting, eating, and as bathing material (Peli *et al.,* 2020). Past studies reported the employment of medicinal plants for postnatal care through ethnopharmacology in several regions and for maternity care in East Amasari District, Indonesia (Korassa *et al.,* 2023).

However, in-depth research on medicinal plants used for postpartum by the Madurese tribe has not attained previous documentation. Therefore, the presented study aimed to collect information on traditional medicinal plants for maternity care and the specific plant parts with their processing methods used by the Madurese tribe, Mekar Sari Village, Kubu Raya Regency, Indonesia.

MATERIALS AND METHODS

This study used a descriptive qualitative method with interviews, observations, and documentation to obtain information. The research location was in Mekar Sari Village, Kubu Raya Regency, Indonesia (Figure 1). Plant sample collection used a purposive sampling technique. The form of the interview is a structured format with one informant in this study. The informant's selection criteria for this study comprised several aspects, including experience, age, and involvement in traditional healing practices. The informant is the main guardian of traditional knowledge in the community, the knowledge informants have is relevant to health needs in the area. The informants were local traditional healers with knowledge of traditional maternity care treatments, using medicinal plants as ingredients. The selected informant for this study was a 45-year-old woman with experience in assisting mothers during childbirth and caring for postpartum mothers

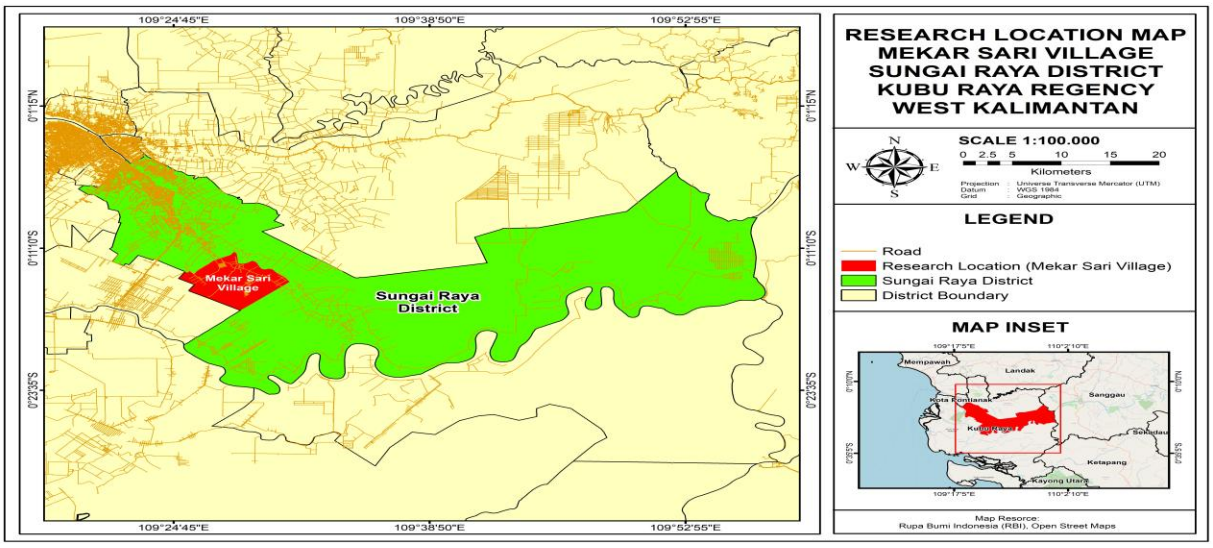

Figure 1. Location map of Mekar Sari Village, Sungai Raya District, Kubu Raya Regency, Indonesia.

using traditional medicine in Mekar Sari Village, Kubu Raya Regency, Indonesia. The informant also actively uses and preserves traditional medicine, based on hereditary knowledge, including the types of medicinal plants, their properties, processing methods, and dosages used in traditional medicine. The first stage of the study involved interviews, observations, and documentation. The second stage involved collecting medicinal plant samples to create a herbarium. Afterward, identifying the herbarium plants sought to determine the scientific names of the species. Plant identification continued at the Biology Laboratory, Faculty of Mathematics and Natural Sciences, Tanjungpura University, Pontianak, Indonesia, with letter number 181/A/LB/FMIPA/UNTAN/2023.

RESULTS AND DISCUSSION

Childbirth is always an invaluable event for a mother. After giving birth, the mothers usually take care to restore their health and body condition (Matondang and Maimunah, 2021). Based on the gathered results, 13 plant species of medicinal plants used for maternity care by the Madurese tribe in Mekar Sari Village, Kubu Raya Regency, Indonesia, have succeeded in their identification (Figure 2). Information about the plant parts with their different processes before using them is available in Tables 1 and 2. The results revealed the community of the Mekar Sari Village, Kubu Raya Regency, is still active in utilizing medicinal plants as traditional medicines for restoring better health.

The medicinal plants used by the people of Mekar Sari Village entailed procurement and identification from the community cultivation sources in the surrounding areas. Ownership of medicinal plants has a large potential in traditional medicines, with the medicinal plants required also found in greater quantity. Local wisdom of using medicinal plants as traditional medicines needs preservation for future generations. Thus, on a scientific basis, the efforts are vital to conserve those important medicinal plants. Moreover, the cultivation of medicinal plants in their yards and gardens adds to conservation efforts carried out by the community of Mekar Sari Village, Indonesia.

The family Zingiberaceae plants are most widely effective as a treatment for maternity care in Mekar Sari Village. The Zingiberaceae family has a distinctive aroma and essential oils that can serve as medicines (Andini *et al.,* 2020). In traditional maternity

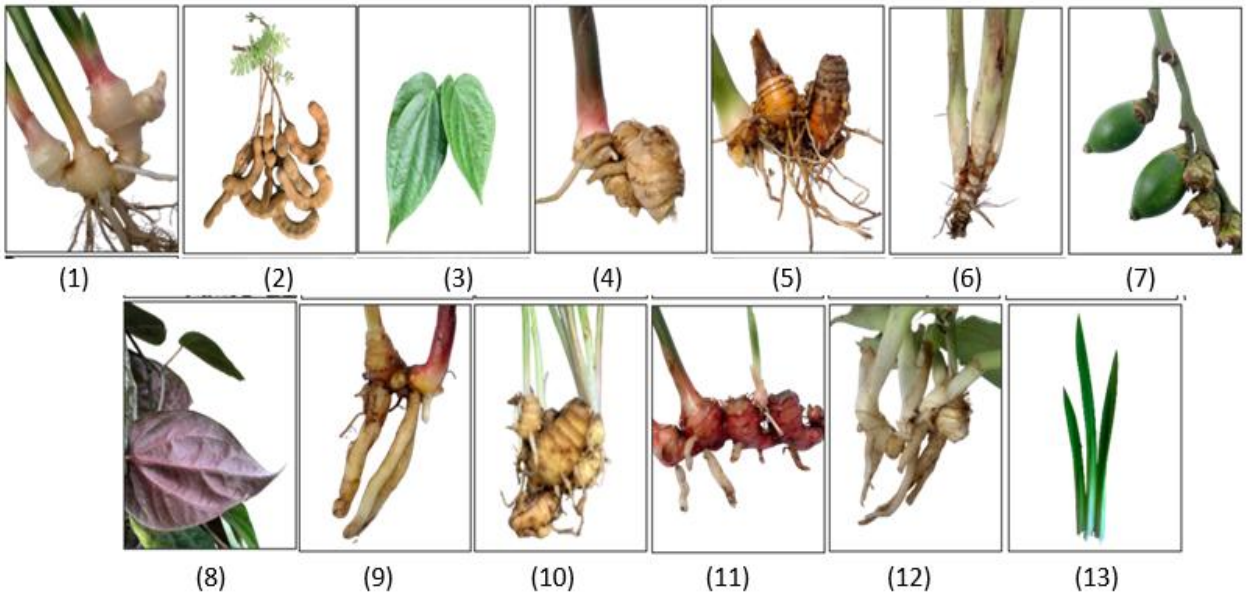

Figure 2. Various plant species of medicinal plants used by the people of Mekar Sari Village: 1. *Jahe putih* (*Zingiber officinale* Roscoe.), 2. *Asam jawa* (*Tamarindus indica* L.), 3. *Sirih hijau* (*Piper betle* Linn.), 4. *lempuyang* (*Zingiber zerumbet* [L.] Roscoe ex Sm), 5. *Kunyit kuning* (*Curcuma longa* Linn.), 6. *Serai* (*Cymbopogon nardus* [L.] Rendle.), 7. *Pinang* (*Areca catechu* L.), 8. *Sirih merah* (*Piper crocatum* Ruiz & Pav), 9. *Temu kunci* (*Boesenbergia rotunda* [L.] Mansf.), 10. *Kunyit putih* (*Curcuma zedoaria* [Christm.] Roscoe.), 11. *Jahe merah* (*Zingiber officinale* Roscoe var. Rubrum), 12. *Kencur* (*Kaempferia galanga* Linn.), and 13. *Pandan* (*Pandanus amaryllifolius* Roxb. Ex Lindl.).

Table 1. Recipe name, plant name, scientific name, families, and medicinal plant parts used as traditional medicine for maternity care treatment in Mekar Sari Village, Indonesia.

No.	Recipe	Plant name	Family name	Part Utilized
1.	Regular Herbs (*Jamu Biasa*)	*Kencur* (*Kaempferia galanga* Linn.*)*	Zingiberaceae	Rhizomes
		Jahe merah (*Zingiber officinale* Roscoe var. Rubrum*)*	Zingiberaceae	Rhizomes
		Kunyit putih (*Curcuma zedoaria* [Christm.] Roscoe.)	Zingiberaceae	Rhizomes
		Temu kunci (*Boesenbergia rotunda* [L.] Mansf.)	Zingiberaceae	Rhizomes
		Sirih merah (*Piper crocatum* Ruiz & Pav)	Piperaceae	Leaves
		Pinang (*Areca catechu* L.)	Arecaceae	Fruits
		Serai (*Cymbopogon nardus* [L.] Rendle.)	Poaceae	Fronds
2.	*Kencur* Rice	*Kencur* (*Kaempferia galanga* Linn.)	Zingiberaceae	Rhizomes
		Kunyit kuning (*Curcuma longa* Linn.)	Zingiberaceae	Rhizomes
		Lempuyang (*Zingiber zerumbet* [L.] Roscoe ex Sm)	Zingiberaceae	Rhizomes
3	Sour Turmeric	*Sirih hijau* (*Piper betle* Linn.)	Piperaceae	Leaves
		Asam jawa (*Tamarindus indica* L.)	Fabaceae	Fruits
		Kunyit kuning (*Curcuma longa* Linn.)	Zingiberaceae	Rhizomes
4.	Lactagogue	*Kencur* (*Kaempferia galanga* Linn.)	Zingiberaceae	Rhizomes
		Kunyit kuning (*Curcuma longa* Linn.)	Zingiberaceae	Rhizomes
		Jahe putih (*Zingiber officinale* Roscoe.)	Zingiberaceae	Rhizomes
5.	*Pilis*	*Jahe putih* (*Zingiber officinale* Roscoe.)	Zingiberaceae	Rhizomes
6.	*Kom-kom* water	*Pandan* (*Pandanus amaryllifolius* Roxb. Ex Lindl.)	Pandanaceae	Leaves
		Serai (*Cymbopogon nardus* [L.] Rendle.)	Poaceae	Leaves
		Sirih hijau (*Piper betle* Linn.)	Piperaceae	Leaves
		Kunyit kuning (*Curcuma longa* Linn.)	Zingiberaceae	Rhizomes

Table 2. Processing methods of the medicinal plants and benefits of traditional maternity care in Mekar Sari Village, Indonesia.

No.	Recipe	Processing method	Benefits
1.	Regular Herbs (*Jamu Biasa*)	To prepare this mixture, combine 2 ounces of *kencur*, 1 ounce of *jahe merah*, 1 ounce of *kunyit putih*, 2 ounces of *temu kunci*, 10 *sirih merah* leaves, 1 young *pinang*, and 5 *serai* fronds. Mash all the ingredients, except for the brown sugar. Place the mashed ingredients in a pot and add about 1 ½ liters of water. Boil the mixture uncovered and then add the brown sugar. After boiling, filter the mixture and transfer it to a container. Wait until it reaches a warm temperature before consuming.	Restores stamina, increases appetite, and heals postpartum wounds. Consume 1 glass three times a day in the morning, afternoon, and evening for 40 days postpartum.
2.	*Kencur* Rice	To prepare this dish, one will need 2 ½ ounces of *kencur*, 1 knuckle of *kunyit kuning*, half an index finger of *lempuyang*, salt to taste, 50 grams of brown sugar, and ½ glass of mashed rice. Mash all the ingredients, except for the rice, then, add them to a pot with about 1 liter of water. Finally, add the mashed rice. Bring to a boil, then filter the mixture and wait until it cools down to a warm temperature before intake.	Healing perineal wounds due to tearing and antioxidants. Consume 1 glass two times a day during the day and night for 40 days after giving birth.
3.	Sour Turmeric	*Sirih hijau* leaves 10 pieces*, asam jawa* fruit 3 pieces, *kunyit kuning* ½ kg, salt to taste, and brown sugar 100 grams. All ingredients need mashing or blending, except brown sugar. The mashed ingredients need putting into a pot with 1 liter of water. Cooked until boiling then add the brown sugar.	Wound healing in postpartum mothers. Consume 1 glass three times a day in the morning, afternoon, and evening for 40 days.
4.	Lactagogue	*Kencur* 2 ½ ounces, *kunyit kuning* one index finger segment, *jahe putih* one index finger segment, crushed rice ½ cup, brown sugar 50 grams and salt to taste. All the ingredients are mashed. Place the mashed ingredients in a pot and add about 1 liter of water. Cook until boiling.	Increases and stimulates breast milk production. Consume once a day in the morning for 40 days postpartum.
5.	*Pilis*	One ounce of *jahe putih* and mashed rice about ½-cup size portion. The thinly sliced ginger entails drying in the sun. The ginger is then lightly roasted and mashed.	Relieves dizziness or lightheadedness, reduces eye fogginess, and warms the body. Applied to the forehead in the morning after bathing for 40 days after childbirth.
6.	*Kom-kom* water	Four young *pandan* leaves, a handful of *serai* leaves, *five sirih hijau* leaves, ½ of a *kunyit kuning* and some rice. The rice undergoes pounding with the turmeric until smooth. Put all ingredients in a pot with about half a pot of water. Let it boil for a while and then mixed with water in a bucket or basin for bathing.	The body feels refreshed; it experiences reduced pain, emits a pleasant scent, and attains a relaxing effect when this product serves for bathing twice a day, in the morning and evening, for 40 days postpartum.

care, the use of the family Zingiberaceae plants is often in the form of herbal medicines. These plants have various complex compounds that play a vital role in stimulating prolactin hormones to increase prolactin and colostrum production and eventually heal maternity wounds (Saudah *et al.,* 2023).

The rhizome of species *kunyit kuning* (*C. longa* Linn.), used as herbal medicine, contains flavonoids, steroids, triterpenoids, saponins, phenols, tannins, and glycosides (Mitayani *et al.,* 2022). Previous studies have indicated that *kunyit kuning* contains essential oils that can increase colostrum production.

This suggests using these medicinal plants may be beneficial in producing more and smoother colostrum production for maternity care women (Sayuti and Atikah, 2022). The species *kunyit kuning,* made into herbal medicine, has numerous benefits for accelerating the healing of wounds after giving birth. These results showed a greater analogy with past findings displaying *kunyit kuning* effectively quickening the healing of grade-II perineal wounds and eliminating the redness (Mutia *et al*., 2021).

Siregar *et al.* (2022) reported the leaves of *sirih merah (P. crocatum)* could expedite the healing of perineal wounds due to their essential oils, which possess antiseptic and antibacterial properties. Mubayyina *et al*. (2022) also mentioned *sirih merah* prevents the infection and performs healing of perineal wounds due to its alkaloids, flavonoids, and polyphenol content, working as antioxidants and antibiotics.

The rhizome of species *jahe putih* (*Z. officinale*) contains galactogogues that may help in stimulating and maintaining breast milk production in maternity care (Ariyanti *et al.,* 2023). Mozafari *et al.* (2021) mentioned consuming the species *jahe putih,* especially ginger capsules, could relieve pain and severity after giving birth. *Jahe putih* has properties to treat headaches and warm the body (Syamswisna, 2025).

Species *asam jawa* (*T. indica* L.) contains calories, proteins, fats, calcium, hydric acid, vitamin A, vitamin B1, and vitamin C, which are beneficial for maintaining physical health during maternity care and are one of the factors affecting breast milk production (Baequny *et al.,* 2016). Susanti *et al.* (2017) stated the utilization of *asam jawa* could reduce the duration of perineal wounds' healing, as it contains antioxidants that could help reduce inflammation.

Species *kencur* rhizome (*K. galanga* Linn.) is an alternative for healing perineal wounds due to tearing because the *kencur* rice herbal medicine comprises *kencur* rhizome, containing phenolic compounds that function as antioxidants (Jalil, 2019). Riasari *et al*. (2019) findings showed the *kencur* rhizome contains phytochemicals in the form of flavonoids, which have anti-inflammatory activity and proved useful in reducing inflammation. Research by Fadillah *et al.* (2024) stated that *kencur* has benefits as an appetite stimulant. Furthermore, *kencur* has properties to facilitate breast milk production, body warming, and pain reduction (Amelia and Rismayanti, 2023).

Plants of species *sirih* leaf (*P. betle* Linn.) contain phytochemicals, namely, saponins, tannins, flavonoids, and alkaloids (Aulia *et al.,* 2023). Saraswati (2022) mentioned the *sirih* leaf chemical content appeared as effective in perineal wound healing because of its antiseptic and saponin properties that trigger collagen formation for healing wounds.

Previous studies reported the species *lempuyang* (*Z. zerumbet* L.) rhizomes contain bioactive compounds flavonoids, alkaloids, steroids, saponins, tannins, phenolics, terpenoids, and coumarins with antibacterial activity (Preshahdin *et al.,* 2023). Chan *et al*. (2023) findings showed the species *lempuyang* could offer a potential for comprehensive symptom relief in various diseases. *Lempuyang* can be effective as herbal medicine to reduce fever, colds, and stomachaches (Hati *et al.,* 2023).

Past research showed the species *kunyit putih* (*C. zedoaria*) contains important secondary metabolites, such as terpenoids, phenolics, steroids, alkaloids, tannins, and saponins, which have activities as anti-inflammatory, anticancer, analgesic, and antimicrobial (Silalahi, 2020). In previous studies, species *kunyit putih* can be beneficial as herbal medicine for the treatment of ulcers, cancer, and asthma (Zamriyetti *et al.,* 2021).

The species *jahe merah* (*Z. officinale* Roscoe var*.* Rubrum) has active compounds, such as curcumene, gingerol, zingiberene, and gingerenone. Furthermore, the bioactive compounds of *jahe merah* rhizome include ascorbic acid, terpenoids, alkaloids, and polyphenols (Siregar *et al.,* 2022). The species *jahe merah* can help reduce headaches and improve the immune system (Aliyanti *et al.,* 2023). Research conducted by Panjaitan *et al*. (2024) also stated the *jahe merah* rhizome

proved more effective in relieving menstrual pain caused by contraction in the uterus that occurs during the menstrual period. Research by Royani *et al.* (2024) revealed *jahe merah* has benefits for increasing stamina. Furthermore, *jahe merah* has properties that increase appetite and warm the body (Lelasari and Syadza*,* 2022).

Past research detailed, the seeds of *pinang* (*A. catechu* L.) contains chemical compounds, such as saponins, tannins, terpenoids, and flavonoids, and these compounds function as antioxidants, antibacterials, antimicrobials, anti-inflammatories, and antifungals (Asrianto *et al.,* 2021). Prastiwi and Sakti (2018) research findings revealed the *pinang* was useful in accelerating wound healing because it contains phytochemicals, antioxidants, antibacterials, and anti-inflammatories. This is also in line with the research by Arriza *et al.* (2023), where *pinang* is effective in speeding up postpartum and healing perineal wounds after giving birth.

The plant species *temu kunci* (*B. rotunda* L.) has chemical contents, such as essential oils and flavonoids, as well as having the activity of an antioxidant and can benefit maternity care, reproduction, and treatment of nausea (Puspitasari *et al.,* 2019). *Serai* fronds (*C. nardus* L.) contains chemical compounds in the form of saponins, alkaloids, flavonoids, tannins, essential oils, and anthraquinones (Clara *et al.,* 2022). *Serai* fronds have beneficial effects of lowering hypertension, strengthening the immune system, reducing the risk of heart disease, and antiseptic (Najmah *et al*., 2023). *Serai* contains essential compounds with properties to relax the body, improve blood circulation, and reduce pain (Marsiah *et al.,* 2024).

Previous research showed *pandan* (*P. amaryllifolius*) leaves contain chemical compounds, such as alkaloids, flavonoids, saponins, and polyphenols, that act as natural antioxidants, antibacterials, antidiabetics, and anticancer agents (Lingling, 2022). *Pandan* leaves have the beneficial effect of preventing bacteria that cause body odor (Tan *et al.,* 2022).

CONCLUSIONS

In the traditional treatment for maternity care, during the puerperium in the Madurese community, Mekar Sari Village, Kubu Raya Regency, Indonesia, 13 different plant species, belonging to six families, have medicinal benefits. The use of medicinal plants for maternity care by the community needs preservation as local wisdom belonging to the said community. This study has potential general limitations. Traditional maternity care practices can differ and undergo modification, such as differences in medicinal plant materials, processing, and dosage, even within the same ethnic group due to regional differences, personal experiences, and availability of materials.

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