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ETHNOBOTANICAL INVESTIGATION OF MEDICINAL PLANTS FOR LACTATION ENHANCEMENT AND POSTPARTUM RECUPERATION IN TRIBAL COMMUNITIES OF SOUTHERN RAJASTHAN

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ABSTRACT: Giving birth is the most physically exhausting experience for a woman's body. Tribal societies use medicinal plants and nutrient-dense foods as natural remedies to boost vitality, facilitate healing, and increase milk supply after delivery of women. The present study was carried outinthetribal-dominated areas of southern Rajasthan, including Banswara, Chittorgarh, Dungarpur, Pratapgarh, Udaipur, and certain parts of Sirohi District. During the study, group discussions and interviews were done with the active participation of local women, health practitioners, and elders known as dais or gunis, who are experts in delivering traditional health care services to lactating mothers in the research area. In the present study, 11 plant species from 9 families were reported as being used to boost milk production and support postpartum recovery by tribal women. The study revealed significant and vital information on the diversity of medicinal plants used by various traditional practitioners in postnatal care, which can be further integrated into the modern healthcare system to improve the health status of lactating women worldwide.

INTRODUCTION: Plants play a crucial role in terrestrial food webs and contribute significantly to global biodiversity. Plants contribute to environmental sustainability, economic benefits, and food security for those living near forests. Plants have a significant role in local cultures and customs, mainly among the tribal communities [1]. Plants are used in a myriad of applications, but their role in contemporary medicine, especially maternal health, has remained vital. Giving birth is the most draining experience for a woman's body. The body needs strength to endure childbirth and also to cope with the postpartum phase. Many cultures employ medicinal herbs and nutrient-dense foods to help mothers recover and restore strength after childbirth [2]. Indigenous flora play an important part in caring for new mothers in tribal communities [3]. These herbs are used as natural treatments to stimulate vitality, promote healing, and increase milk production [4]. These medicinal plants are useful in places with limited access to modern healthcare.

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Lactation and postpartum healing are important aspects of a woman's life. During these times, both the mother and the infant require proper nutrition and care. Breastfeeding is recognised as an important aspect of postpartum care. It provides high-quality food to the infant that strengthens the

system of a newborn and may reduce future healthcare costs [5]. However, many women in remote and impoverished locations lack access to adequate maternal care. So they use traditional medicinal plants, which are inexpensive and easy to find. Despite advances in science and medicine, traditional after-birth care procedures continue to be important in many indigenous communities. However, people are beginning to forget and cease sharing this knowledge. Collaboration between traditional healers and contemporary physicians is essential for the effective use of therapeutic plants. This could lead to better health for mothers and newborns. In India, when new healthcare is replacing conventional approaches, the documentation and preservation of this knowledge is necessary before it disappears [6]. Therefore, listing local plants that are used to care for new mothers will not only preserve traditional knowledge but also provide a foundation for developing low-cost plant-based medications [3].

The objective of this research is to chronicle the use of herbs by the tribal people in southern Rajasthan to increase milk production and support postpartum recovery. The preservation and confirmation of this traditional knowledge will help indigenous people to maintain sustainable healthcare practices.

MATERIALS AND METHODS: Rajasthan, India's second largest state, is located in the country's northwest. Geographically, it is located between 23º3' to 30º12' longitudes and 69º30' to 78º17' latitudes. The study area was southern Rajasthan, which included Banswara, Chittorgarh, Dungarpur, Pratapgarh, Udaipur, and certain areas of Sirohi districts. It is also known as Rajasthan's tribal belt and is controlled by the Bhil, Damor, Garasia, Kathodia, and Meena indigenous groups.

The frequent meetings were held in tribal-dominated blocks of the selected districts. The transect walk was done to learn about the village's circumstances, specifically its socioeconomic status and available natural resources. After reaching the village, one or two known people were contacted before contacting other members of the local tribe. Local resource persons were also active in determining the location of tribal villages and traditional practitioners, translating local dialects, and naming plants locally. Group discussions and interviews are conducted with the active participation of local women, health practitioners, and elders known as Dais or midwives, who are experts in providing traditional health care services to lactating mothers in the research area **Fig. 1A** to **C**).

A visit to a nearby forest region was also arranged, with traditional folk healers participating. During the interviews, the native names of the plants and their use in postpartum healthcare were also addressed. Additionally, fresh and dry plant components were collected, packed in plastic bags, and compacted within used newspapers and brought to the laboratory for additional examination and scientific identification. Selected plant specimens that were obtained from the field were consulted with published regional floras, including Bhandari, Shetty and Singh, and Kotiya for their suitable identification [7-9].

FIG. 1(A, B, C): GROUP DISCUSSIONS WITH THE TRIBAL PEOPLE IN THE STUDY AREA

RESULTS: During survey, it was reported that 11 medicinal plants and its various parts were used by the tribal women to recover herself from postpartum period. These plants help in cleansing the body of the mother internally after the childbirth and act as a galactagogue and maintain postpartum bleeding. The different plant species are being described in the following order of botanical name, family, local name, habit, plant part used, used, herbal formulations, and dose as suggested by the traditional health practitioners and knowledgeable old women of the study area during survey.

1. Botanical name: *Amaranthus viridis* L.

Family: Amaranthaceae

Local name: Chaulayi

Habit: Herb

Plant part used: Whole plant

Uses: Cleanse uterus after delivery

Herbal Formulation and Dose: Fresh and young whole plant is taken, crushed and cooked in coconut oil. This is eaten as a vegetable after 1 week of delivery.

2. Botanical name: *Calotropis gigantea* (L.) W. T. Aiton

Family: Apocynaceae

Local name: Aak

Habit: Shrub

Plant part used: Leaves, Latex

Uses: Medicated water is used in bathing during post pregnancy.

Herbal Formulation and Dose: 100g leaves are boiled in 2L water then 2-3 drops of fresh latex is mixed in this boiled water to prepare a medicated water.

3. Botanical name: *Cardiospermum halicacabum* L.

Family: Sapindaceae;

Local name: Kanphati

Habit: Climber

Plant part used: Seedling

Uses: Cleansing of uterus after childbirth.

Herbal Formulation and Dose: Fresh seedling is taken, an infusion is prepared with 250mL water. 1-2 teaspoon of this infusion is given orally empty stomach in the morning.

4. Botanical name: *Cestrum nocturnum* L.;

Family: Solanaceae

Local name: Raat rani

Habit: Shrub

Plant part used: Stem, Leaves

Uses: For fast recovery of women after childbirth.

Herbal Formulation and Dose: Fresh stem and leaves are consumed once a day.

5. Botanical name: *Clitoria ternatea* L

Family: Fabaceae

Local name: Aparajita

Habit: Climber

Plant part used: Flower

Uses: Clean the uterus and control bleeding postpartum.

Herbal Formulation and Dose: A fresh flower is crushed and mixed with 1 teaspoon honey. This mixture is consumed early in the morning.

6. Botanical name: *Crotalaria spectabilis* Roth; **Fig. 2B**.

Family: Fabaceae

Local name: Jhunjhuni

Habit: Shrub

Plant part used: Whole plant

Uses: Controls postpartum bleeding.

Herbal Formulation and Dose: Fresh, young whole plant is crushed in 500mL water and filtered. 2 tablespoons are consumed orally after delivery.

7. Botanical name: *Euphorbia hirta* L.; **Fig. 2A**.

Family: Euphorbiaceae

Local name: Dudhi

Habit: Herb

Plant part used: Whole plant

Uses: Increase lactation after childbirth.

Herbal Formulation and Dose: Whole plant is cooked in oil and consumed as a vegetable.

8. Botanical name: *Moringa oleifera* Lam.

Family: Moringaceae

Local name: Saragwa

Habit: Tree

Plant part used: Leaves, Root

Uses: Increase lactation

Herbal Formulation and Dose: Fresh leaves are cooked and eaten as vegetable pre and post-delivery. 50g roots are boiled in 500mL water and half cup of the filtrate is taken orally.

9. Botanical name: *Ocimum gratissimum* L.

Family: Lamiaceae

Local name: Van tulsi

Habit: Herb

Plant part used: Leaves

Uses: For early recovery of women after childbirth.

Herbal Formulation and Dose: 20g leaves are grinded in 500mL water to prepare an infusion. This infused water is taken orally twice a day after the meal.

10. Botanical name: *Sida cordifolia* L.

Family: Malvacea;

Local name: Khironti

Habit: Herb

Plant part used: Root

Uses: To recover from weakness after childbirth.

Herbal Formulation and Dose: 20groots fresh are finely crushed with 500mL water and a decoction is prepared. 2-3 tablespoon of the decoction is consumed orally.

11. Botanical name: *Trigonella foenum-graecum* L.

Family: Fabaceae

Local name: Methi

Habit: Herb

Plant part used: Seed

Uses: Induce lactation.

Herbal Formulation and Dose: 2 tablespoon of germinated seeds are eaten empty stomach in the morning.

FIG. 2: PLANTS USED DURING POSTPARTUM CARE A) *EUPHORBIA HIRTA* B) *CROTALARIA SPECTABILIS*

DISCUSSION: The present study describes an ethnobotanical expedition of southern Rajasthan for postpartum health care. Overall, 11 medicinal plants belonging to 9 dicot families were reported to be used for postpartum health care. The Fabaceae family has the most genera and species among all the families. Iragi, Manya, and Chassange also identified Fabaceae as a prominent family in their respective studies [10-12].

According to the data, leaves are employed in the maximum quantity (when compared to other plant parts) for postpartum care. A similar trend has been reported by Balamurugan and Tamangwith leaves being the most widely used plant part [13, 14]. The habit-wise classification of these plant species shows that most of the plants used pertain to the herb group, followed by shrubs, climbers, and tree. Balamuruganand Jan reported similar data, indicating that herbs were the most widely employed living form to treat a variety of gynaecological issues [13, 15].

The authenticity and efficacy of the reported plants in the current study are determined by examining the previously mentioned ethnobotanical and pharmacological findings. Koko revealed that *Euphorbia hirta* improves milk production in female rats [16]. This galactagogue effect supports the plant's traditional use in the current study to boost milk supply in lactating women. *Moringa oleifera* leaves were extensively used to stimulate lactation in Nigeria, according to a number of studies [17, 18]. According to Prakasam, *Trigonellafoenum-graecum* is the most widely used galactogogue in the world due to its exceptional lactogenic properties [19]. According to Ijeh, the Igbos of Nigeria utilise the leaves of *Ocimum gratissimum* to make soup and porridge to help women recover from delivery [20].

Some of the current study's findings are being reported for the first time and were not previously reported. During the postpartum period, *Amaranthus viridis* plant for uterine cleansing, *Crotolaria spectabilis* plant for postnatal bleeding, *Cestrum nocturnum* stem and leaves for recuperation following delivery, *Cardiospermum halicacabum* seedlings for uterine cleansing, and *Clitoria ternatea* flowers for uterine cleansing and bleeding following childbirth have not previously been reported.

Roots of *Sida cordifolia* are being mentioned as a postpartum recovery treatment for the first time. For the first time, therapeutic water for postpartum baths produced from *Calotropis gigantea* leaves and latex has been documented. However, some of the medicinal plants are reported to be toxic to the human body in earlier studies, but small dosages of

these plants are not harming the tribal communities in the study area.

CONCLUSION: Overall, 11 medicinal plant species were recorded, which aimed to alleviate postpartum abdominal pain, promote physical recovery, and increase lactation. These practices are widespread in southern Rajasthan, and they serve as the foundation for primary maternity care in many tribal communities. The data gathered throughout this investigation sheds light on the possibilities of local health practices. They may not sound intellectual, but their importance in today's world cannot be denied. This traditional healthcare system has been caring for tribal women for decades. If these methods are paired with a contemporary scientific healthcare system, the condition of women in rural regions could improve dramatically. Similarly, metropolitan women could benefit greatly from learning about these traditional traditions. The benefits of these approaches have been proven over time, and it is also well recognised that they have no negative side effects. As a result, these health traditions are part of cultural history and must be protected and spread across society.

There is a definite need for ethnobotanical research to chronicle plant use, with a special emphasis on often overlooked topics such as women's healthcare. Research into the pharmacological mechanisms and efficacy of these old and ubiquitous remedies may reveal insights that can be used to supplement and improve both traditional and modern postpartum care.

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CONFLICTS OF INTEREST: Nil

REFERENCES:

1. Panigrahi S, Rout S and Sahoo G: Ethnobotany: A strategy for conservation of plant. Annals of the Romanian Society for Cell Biology 2021; 25: 1370-1377.
2. Ladis P: The Wise Woman's Guide to Your Healthiest Pregnancy and Birth: From Preconception to Postpartum. Simon and Schuster 2021.
3. Ovuakporie-Uvo OO, Akinnaanu OA, Awosika SO and Idu M: Medicinal Plants Used for Antenatal and Postnatal Care in Ondo Town, Nigeria. Journal of Herbal Medicine 2024; 46: 1-6.
4. Pal RS, Pal Y and Wal P: A review on post pregnancy healer herbs. Current Women's Health Reviews 2019; 15: 102-108.
5. Chęcińska-Maciejewska Z, Ciborek A, Krauss H and Gibas-Dorna M: Advantages of breastfeeding for the mother-infant dyad. Journal of Health Inequalities 2023; 10: 64-71.
6. Dudi A and Singh D: Medicinal plants used during traditional postnatal care practices in Rajasthan, India. Studies on Ethno-Medicine 2018; 12: 212-220.
7. Bhandari MM: Flora of Indian desert. Scientific Publishers 1990.
8. Shetty BV and Singh V: Flora of Rajasthan. Botanical survey of India 1993.
9. Kotiya A, Solanki Y and Reddy GV: Flora of Rajasthan. Rajasthan State Biodiversity Board 2020.
10. Iragi GK, Rusaati BIW, Nfizi IB, Masumbuko CN, Gendusa PA, Furaha AM and Kang JW: Ethnomedicinal study of plants used in the Uvira Territory (Democratic Republic of Congo). Forest Science and Technology 2021; 17: 144-154.
11. Manya MH, Keymeulen F, Ngezahayo J, Bakari AS, Kalonda ME, Kahumba BJ, Duez P, Stévigny C and Lumbu SJB: Antimalarial herbal remedies of Bukavu and Uvira areas in DR Congo: an ethnobotanical survey. Journal of Ethnopharmacology 2020; 249: 1-23.
12. Chassagne F, Hul S, Deharo E and Bourdy G: Natural remedies used by Bunong people in Mondulkiri province (Northeast Cambodia) with special reference to the treatment of 11 most common ailments. Journal of Ethnopharmacology 2016; 191: 41-70.
13. Balamurugan S, Vijayakumar S, Prabhu S and Yabesh JM: Traditional plants used for the treatment of gynaecological disorders in Vedaranyam taluk, South India-An ethnomedicinal survey. Journal of Traditional and Complementary Medicine 2018; 8: 308-323.
14. Tamang S, Singh A, Bussmann RW, Shukla V and Nautiyal MC: Ethno-medicinal plants of tribal people: A case study in Pakyong subdivision of East Sikkim, India. Acta EcologicaSinica 2023; 43: 34-46.
15. Jan HA, Jan S, Bussmann RW, Ahmad L, Wali S and Ahmad N: Ethnomedicinal survey of the plants used for gynecological disorders by the indigenous community of District Buner, Pakistan. Ethnobotany Research and Applications 2020; 19: 1-18.
16. Koko BK, Konan AB, Kouacou FKA, Djétouan JMK and Amonkan AK: Galactagogue effect of *Euphorbia hirta* (Euphorbiaceae) aqueous leaf extract on milk production in female wistar rats. Journal of Biosciences and Medicines 2019; 7: 51-65.
17. Popoola JO and Obembe OO: Local knowledge, use pattern and geographical distribution of *Moringaoleifera* Lam. (Moringaceae) in Nigeria. Journal of Ethnopharmacology 2013; 150: 682-691.
18. Brar S, Haugh C, Robertson N, Owuor PM, Waterman C, Fuchs III GJ and Attia SL: The impact of *Moringaoleifera* leaf supplementation on human and animal nutrition, growth, and milk production: A systematic review. Phytotherapy Research 2022; 36: 1600-1615.
19. Prakasam A, Darji P, Kumar PM, Yamiben P, Vanshita P and Anitaben P: Therapeutic benefits of Fenugreek on Breast Milk Production and Weight Gain among Newborns. J of Natural Remedies 2024; 24: 2795-2805.
20. Ijeh II, Njoku OU and Ekenze EC: Medicinal evaluation of extracts of *Xylopiaaethipica* and *Ocimumgratissimum*. Journal of Medicinal and Aromatic Plant Sciences 2004; 26: 41-49.

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