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A study on traditional mother care plants of rural communities of South Kerala

NP Rajith¹, M Navas², A Muhammad Thaha², MJ Manju³, N Anish¹, S Rajasekharan² & V George^{1*}

¹Amity Institute for Herbal & Biotech Products Development, Ambalamukku, PO Peroorkada, Thiruvananthapuram, Kerala; ²Tropical Botanic Garden & Research Institute, Palode, Thiruvananthapuram, Kerala; ³NSS College, Pandalam, Pathanamthitta, Kerala
E-mail: palpuprakulam@yahoo.co.in

Traditional Knowledge has been used for centuries by indigenous and local communities in healthcare. It is an important factor for sustainability of natural resource management. The women folk of the country play a vital role in the use and mobilization of such biodiversity based knowledge system. The efficacy of this knowledge is time tested and capable of healthcare management in the form of nutraceuticals and pharma food. The study aimed to document the existing system of traditional knowledge and utility pattern of medicinal plants related to pre and post natal care. This resulted in the documentation of 52 plant species belonging to 49 genera and 38 families, as 17 single drugs, 8 formulations of medicated water for bath (*Vethuvellam*), 5 formulations of nutraceuticals (*Kurukkumarunnu*), 4 formulations of food (medicated porridge). The plants are enumerated along with local name, type of plants, family name, parts used and mode of administration.

Keywords: Traditional Knowledge, Traditional mother care, Pre-natal, Post-natal, Nutraceuticals, Medicinal plants, Kerala

IPC Int. Cl.⁸: A61K36/00, A61P15/00, A61P15/06, A61P15/14

India has a long history in traditional health practices in local health tradition and home remedies (Grandma's medicine). Home remedies are especially aimed in uplifting the health profile of women and children. Even though modern medical systems are available, most of the people are still depending on the rich local health traditions for mother and child care. In Kerala, this diversified system of traditional practices prevails among the rural communities since time immemorial. The study aims to document the plants used for mother and child care by the indigenous community/rural people of South Kerala. Medico-ethnobotany acts as a bridge between botany and tribal knowledge regarding medicinal properties of plants. *Rigveda* and *Atharvaveda*, which dates back to 2,000–1,000 BC and several post *Vedic* treatise, viz. *Charakasamhitha* (100 AD), *Sushruthasamhitha* (100-800 AD), *Dhanwanthari Nighantu* (1,200 AD), are the important ancient sources of information on medicinal plants¹. Ethnomedicine is usually plant based and ingredients are from locally available flora and fauna combined with magico-religious practices. Mother and child care is one of the major divisions of *Ayurveda*. During pregnancy, nausea, vomiting,

tiredness, urinary problems, genital bleeding, fever, weakness, gas in abdomen, edema and toothache are the major problems². There are many time tested practices designed to suit the health problems of the mother and child³⁻⁸. The prenatal care aims at easy delivery and a healthy child. Postnatal care aims to recover women's health after delivery.

Methodology

Frequent field visits were conducted in selected *Gramapanchayats* of Thiruvananthapuram, Kollam and Pathanamthitta districts of South Kerala and gathered information about traditional knowledge pertained to mother care, and the detailed application and administration of plant remedies for pre- and post-natal care (Fig. 1). Data sheets and questionnaires were used for data collection, which

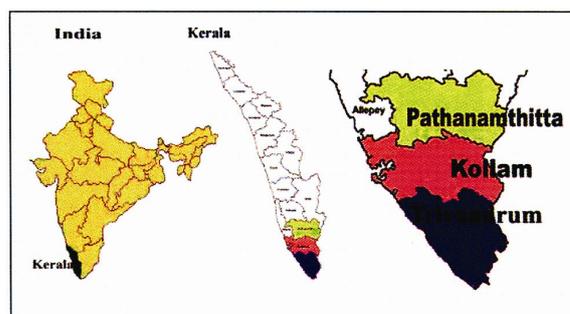


Fig. 1—Location map of study area

*Corresponding author

includes collection number, name and age of informants, place, local name, family, specificity in collecting useful parts, detailed method of drug preparation, specificity of dosage, restrictions if any and administration. Photographs were also taken for correct identification. The plants are enumerated with Latin names followed by family, local name, parts used and medicinal uses. A detailed description about preparation, administration, and application of the drug are also given.

Enumeration

In the enumeration of data, the plant species are arranged with their serial number, botanic name, local name, type of the plant, family name, parts used, and mode of administration, etc. (Figs. 2-10). The voucher specimen along with the number is deposited with Herbarium of Tropical Botanic Garden and Research Institute, Palode. The study was carried out through the use of a structured and pre-tested interview schedule to elucidate information. The questionnaires were designed in an open ended format. The permission of the holders of the

information was taken in writing and thus the documentation was done. The respondents were mostly elderly women. Generally, common ailments/discomforts were treated and life threatening diseases/ailments were attended by doctors/experienced persons (Table 1).

Compound drugs

Apart from the single drug, many combinations of drugs are used by local communities for natal treatment. They are *Vethuvellam* and *Kurukkumarunnu*- a medicated porridge. Equal quantities of the different species' used in the preparation of compound drugs are:

Vethuvellam (Medicated water for bath)

After the delivery, the body of women becomes very weak and to rejuvenate the body, many medicinal plants preparations are used. The leaves and barks of plants like *Artocarpus heterophyllus* Lam., *Mangifera indica* Linn. etc. are used for the purpose. The leaves of these species are boiled in water and used for bathing the women after delivery.

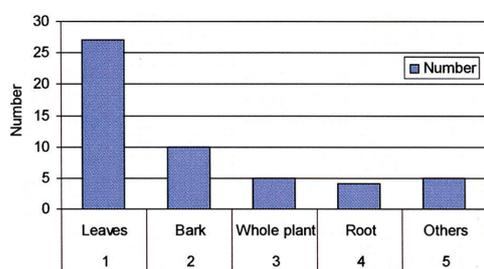


Fig 2 Plant parts used for treatment



Fig3 *Artocarpus heterophyllus*



Fig 4 *Sida alanifolia*



Fig 5 *Calycopteris floribunda*



Fig 6 *Calotropis gigantea*



Fig 7 *Gloriosa superba*



Fig 8 *Clerodendrum infortunatum*



Fig 9 *Ixora coccinea*



Fig 10 *Glycosmis pentaphylla*

Table 1—Plants used by the local people for treating women after delivery

Plant name/ Local name/habit	Family	Parts used	Mode of administration
<i>Achyranthes aspera</i> Linn., <i>Kadaladi</i> /herb	Amaranthaceae	Whole plant	Whole plant is ground, cooked/ boiled in coconut oil and given one teaspoon 3 times daily for 5 days after delivery to get rid of debris in the womb.
<i>Adhatoda vasica</i> Nees. <i>Adalodakam</i> / shrub	Acanthaceae	Leaves	Half glass fresh leaf extract mixed in boiled water is given daily after delivery for curing body ache.
<i>Aerva lanata</i> Juss. Ex Schult. <i>Cherula</i> /herb	Amaranthaceae	Whole plant	Whole plant decoction mixed with one glass of cow's milk is boiled till it reaches the volume of the milk. Half or one glass is taken in the early morning and evening, from 7 th month of pregnancy for easy delivery.
<i>Asparagus racemosus</i> Willd., <i>Satavari</i> /climbing herb	Liliaceae	Tuber	Fresh tuberous root juice is given orally 15 ml twice a day after food to check excessive bleeding and abdominal pain after delivery. Dried and powdered root juice is given orally either with milk or alone twice a day to increase lactation.
<i>Bacopa monnieri</i> (L.) Penn., <i>Brahmi</i> /herb	Scrophulariaceae	Whole plant	Fresh whole plant juice is given orally 3 teaspoonfuls twice a day to pregnant ladies for getting relief from the abdominal pain. Whole plant decoction is given during pregnancy period for increasing foetal growth.
<i>Benincasa hispida</i> (Thunb.) Cogn., <i>Kumbalam</i> /climber	Cucurbitaceae	Fruit	Expressed fresh fruit juice (15 ml) is taken twice a day to prevent gas trouble.
<i>Calotropis gigantea</i> (L.) R. Br., <i>Erukku</i> /shrub	Asclepiadaceae	Latex	Plant latex mixed with half boiled eggs is given to women lacking sufficient lactation. Plant leaves are used to prepare <i>Vethuvellam</i> (medicated water for bathing the mother after delivery).
<i>Clitoria ternatea</i> Linn., <i>Sankupushpam</i> /climbing herb	Fabaceae	Flower	White flowers of the plant crushed and mixed with honey is taken 2 teaspoonfuls daily in early morning to clean the uterus after delivery, and also to check the bleeding from the uterus.
<i>Cocos nucifera</i> Linn., <i>Thengul</i> / tree	Arecaceae	Root, inflorescence	Squashed root/ inflorescence (20 gm) decoction, boiled in 250 ml of water for 15 minutes is used to prevent stomachache after delivery to stop the bleeding.
<i>Cuminum cyminum</i> Linn., <i>Jeerakam</i> /herb	Apiaceae	Seed	Powdered seeds mixed with <i>ghee</i> and honey is given orally (15 ml) to children against vomiting breast milk. Seeds boiled in water and given to the child for getting relief from stomach pain.
<i>Curculigo orchioides</i> Gaertner., <i>Nilappana</i> /herb	Amaryllidaceae	Rhizome	Fresh tuberous root paste mixed with one glass of cow's milk is taken orally to get relief from stomach pain after delivery.
<i>Euphorbia hirta</i> Linn., <i>Nilappala</i> /herb	Euphorbiaceae	Leaves	Fresh leaves decoction (15 ml) is taken daily after food to increase lactation.
<i>Gloriosa superba</i> Linn., <i>Menthoni</i> /herb	Liliaceae	Root	Fresh root paste is applied on the supra pubic region and the vagina to promote labour pain.
<i>Mullugo pentaphylla</i> Linn., <i>Parpadakapullu</i> /herb	Aizoaceae	Leaves	Leaf decoction is given twice a day for cleaning the uterus after delivery. Whole plant decoction (75gm) with water (50ml) is given 3 teaspoons thrice a day for 7 days for easy delivery.
<i>Moringa oleifera</i> Lam., <i>Muringa</i> /tree	Moringaceae	Root, leaves	Fresh roots (50 gm) are ground and the paste is mixed in water and taken single dose just after delivery to expel the placenta. The leaves are highly nutritious food for pregnant women before and after delivery.
<i>Sida alnifolia</i> Linn., <i>Kurunthottil</i> / shrub	Malvaceae	Whole plant	Fresh whole plant paste in milk is taken (after 7 months of pregnancy) ½ or 1 glass daily before bed time for normal delivery.
<i>Trachyspermum roxburghianum</i> (DC.) Craib., <i>Ayamodakam</i> / herb	Apiaceae	Seed	Powdered seeds mixed with honey is taken 2 teaspoonfuls 3 times daily for reducing stomach pain after delivery.

This medicated water is called *Vethuvellam*. The mode of preparation of *Vethuvellam* varies in different places. The enumeration of plants which are used to prepare *Vethuvellam* with its family in paranthesis, local name and parts used are given as below:

Formulation- 1

- 1 *Careya arborea* Roxb. (Lecythidaceae), *Pezhu*, dried bark
- 2 *Cocos nucifera* Linn. (Arecaceae), *Thengu*, partially dried bark
- 3 *Ficus benghalensis* Linn. (Moraceae), *Peral*, dried bark
- 4 *Ficus gibbosa* Blume (Moraceae), *Ithi*, dried bark
- 5 *Ficus glomerata* Roxb. (Moraceae), *Athi*, dried bark
- 6 *Ficus religiosa* Linn. (Moraceae), *Arayal*, dried bark
- 7 *Mangifera indica* Linn. (Anacardiaceae), *Mavu*, dried bark

Formulation- 2

- 1 *Anacardium occidentale* Linn. (Anacardiaceae), *Parankimavu*, dried bark
- 2 *Calycopteris floribunda* Lam. (Combretaceae), *Pullanji*, fresh leaves
- 3 *Careya arborea* Roxb. (Lecythidaceae), *Pezhu*, dried bark
- 4 *Clerodendrum infortunatum* Linn. (Verbenaceae), *Peruvelum*, fresh leaves
- 5 *Ficus benghalensis* Linn. (Moraceae), *Peral*, dried bark
- 6 *Ficus gibbosa* Blume (Moraceae), *Ithi*, dried bark
- 7 *Ficus glomerata* Roxb. (Moraceae), *Athi*, dried bark
- 8 *Ficus religiosa* Linn. (Moraceae), *Arayal*, dried bark
- 9 *Musa paradisiaca* Linn. (Musaceae), *Vazha*, fresh leaves
- 10 *Piper nigrum* Linn. (Piperaceae), *Kurumulaku*, fresh leaves and stem
- 11 *Psidium guajava* Linn. (Myrtaceae), *Pera*, fresh leaves
- 12 *Quassia indica* Nooteboom. (Simaroubaceae), *Karinjotta*, fresh leaves
- 13 *Vitex nigundo* Linn. (Verbenaceae), *Karinochi*, fresh leaves

Formulation-3 (*Nalpamarapatta*- bark of 4 *Ficus* sp)

- 1 *Ficus benghalensis* Linn. (Moraceae), *Peral*, dried bark
- 2 *Ficus gibbosa* Blume (Moraceae), *Ithi*, dried bark

- 3 *Ficus glomerata* Roxb. (Moraceae), *Athi*, dried bark
- 4 *Ficus religiosa* Linn. (Moraceae), *Arayal*, dried bark

Formulation- 4

- 1 *Calotropis gigantea* (L.) R. Br. (Asclepiadaceae), *Erikku*, fresh leaves
- 2 *Quassia indica* Nooteboom. (Simaroubaceae), *Karinjotta*, fresh leaves
- 3 *Tamarindus indica* Linn. (Caesalpiniaceae), *Puli*, fresh leaves

Formulation- 5

- 1 *Artocarpus heterophyllus* Lam. (Moraceae), *Plavu*, fresh leaves
- 2 *Azadirachta indica* A. Juss. (Meliaceae), *Veppu*, fresh mature leaves
- 3 *Biophytum sensitivum* (L.) DC. (Oxalidaceae), *Mukkutti*, whole plant
- 4 *Careya arborea* Roxb. (Lecythidaceae), *Pezhu*, fresh bark
- 5 *Cocos nucifera* Linn. (Arecaceae), *Thengu*, rachis, coconut shell
- 6 *Ficus benghalensis* Linn. (Moraceae), *Peral*, dried bark
- 7 *Ficus gibbosa* Blume (Moraceae), *Ithi*, dried bark
- 8 *Ficus glomerata* Roxb. (Moraceae), *Athi*, dried bark
- 9 *Ficus religiosa* Linn. (Moraceae), *Arayal*, dried bark
- 10 *Piper nigrum* Linn. (Piperaceae), *Kurumulaku*, fresh leaves, Stem

Formulation- 6

- 1 *Adhatoda vasica* Nees (Acanthaceae), *Adalodakam*, fresh mature leaves
- 2 *Calycopteris floribunda* Lam. (Combretaceae), *Pullanji*, fresh leaves
- 3 *Careya arborea* Roxb. (Lecythidaceae), *Pezhu*, dried bark
- 4 *Clerodendrum infortunatum* Linn. (Verbenaceae), *Peruvelam*, fresh leaves
- 5 *Musa paradisiaca* Linn. (Musaceae), *Vazha*, fresh mature leaves
- 6 *Quassia indica* Nooteboom. (Simaroubaceae), *Karinjotta*, mature leaves
- 7 *Tamarindus indica* Linn. (Caesalpiniaceae), *Puli*, mature leaves

Formulation- 7

- 1 *Azadirachta indica* A. Juss. (Meliaceae), *Veppu*, mature leaves
- 2 *Boerhaavia diffusa* Linn. (Nyctaginaceae), *Thazhuthama*, root

- 3 *Calotropis gigantea* (L.) R. Br. (Asclepiadaceae), *Erukku*, mature leaves
- 4 *Curcuma longa* L. (Zingiberaceae), *Manjal*, mature leaves, dried rhizome
- 5 *Ficus bengalensis* Linn. (Moraceae), *Peral*, dried bark
- 6 *Ficus gibbosa* Blume (Moraceae), *Ithi*, dried bark
- 7 *Ficus glomerata* Roxb. (Moraceae), *Athi*, dried bark
- 8 *Ficus religiosa* Linn. (Moraceae), *Arayal*, dried bark
- 9 *Pandanus odoratissimus* Linn.f. Lam. (Pandanaaceae), *Kaitha*, tender leaves
- 10 *Psidium guajava* Linn. (Myrtaceae), *Pera*, mature leaves
- 11 *Tribulus terrestris* Linn. (Zygophyllaceae), *Njerinjil*, root

Formulation- 8

- 1 *Artocarpus heterophyllus* Lam. (Moraceae), *Plavu*, fresh leaves
- 2 *Cocos nucifera* Linn. (Arecaceae), *Thengu*, rachis
- 3 *Curcuma longa* Linn. (Zingiberaceae), *Manjal*, fresh leaves, rhizome
- 4 *Glycosmis pentaphylla* (Retz.) Correa (Rutaceae), *Panchi*, fresh leaves
- 5 *Ixora coccinea* Linn. (Rubiaceae), *Thechi*, leaves

Kurukkumarunnu

Kurukkumarunnu, a nutraceutical type, is a form of medicines used in natal treatment. In this, the plant parts like root, stem, inflorescence etc. are used either as decoction/ juice/ in the form of a *lehya*. After delivery, this preparation is helpful for rejuvenating the body and also to avoid stomach pain or back pain. In the study, different formulations of *Kurukkumarunnu* documented are:

Formulation-1

Equal quantities of the *Hemidesmus indicus* (Linn.) R. Br. (*Naruneendi*) outer root bark and barks of *Erythrina stricta* Roxb. (*Murukku*) and *Moringa oleifera* Lam. (*Muringa*) are crushed along with equal quantity of *Leucas aspera* (Willd.) Link (*Thumba*) leaves and the juice thus obtained is taken 3 teaspoonfuls daily. The juice is also mixed with dried ginger, pepper, jaggery, *ghee* and taken in little coconut oil. Or this mixture is boiled till a semisolid form, *Lehya* is obtained. It is given 2 teaspoon daily before food to avoid stomach pain or for blood purification after delivery.

Formulation- 2

Leaf juice of *Gossypium herbaceum* Linn. (*Kuruparuthi*) is mixed with rice flour (*Oryza sativa* Linn.) and palm jaggery (*Borassus flabellifer* Linn.) to prepare the *kurukkumarunnu* in *ghee*. It is given to the mother for alleviating body pain after delivery one teaspoon twice daily before food.

Formulation- 3

Juice of equal quantities of *Mimosa pudica* Linn. (*Thottavadi*) and *Borassus flabellifer* Linn. crushed together is taken with *Karupotti* (palm jaggery) and *ghee*. This *kurukku* (semi solid form), is given one spoonful daily before food to women after delivery in order to cure body pain.

Formulation- 4

Equal quantities of juice obtained from leaves of *Cissampelos pareira* (Buch.-Ham. ex DC.) Forman (*Malathangi*), *Azima tetraacantha* Lam. (*Yeasanku*), and *Thespesia populnea* (L.) Soland. ex Corr. (*Seelanthi*), and then taken with *Borassus flabellifer* Linn. (*Karipotti*/palm jaggery), and *Cocos nucifera* Linn. (coconut oil). Or it is prepared in the form of a *Lehya* (*Kurukkumarunnu*) in coconut oil. This is administered to women to avoid over bleeding after delivery.

Formulation- 5

The rhizomes of *Curcuma longa* Linn. are ground and mixed with *Cocos nucifera* Linn. (coconut milk), *Ghee* and administered orally as *kurukkumarunnu* to the mother in early morning 1 spoon for 2-3 days to avoid worm infection.

In addition to these formulations, different preparations like *Jeeraka kanji*, *Njavarayari kanji*, *Uluva kanji* and *Elakanji* are also taken by mothers as a remedy for pre- and post -natal problems. Main ingredients of these preparations are dried seeds of cumin (*Cuminum cyminum* L.), fenugreek (*Trigonella foenum-graecium* L.), cardamom [*Elataria cardamomum* (L.) Maton], leaves of *Coleus aromaticus* Benth., palm jaggery, rice and coconut milk. This is given to the mother after 15 days of delivery in early morning. These preparations are very effective against urinary problems, strengthening mother's body after delivery, remove stomach pain, avoid excess bleeding, etc.

Conclusion

In the study, information on 52 plant species in 49 genera coming under 38 families used for various treatments are documented. The informants with the

age group 60-80 yrs are capable of giving most of the information. The 52 species are applied or administered through different media. Water is found as the main and important medium. Out of 52 species, 23 spices are administered orally while others are applied both externally and internally. An analysis of the officinal parts used for treatment shows variation from species to species, almost all parts are used in treatment such as leaves, stem, root (rhizome, tuber) flower, fruits, seeds etc. (Fig. 10). Leaves are the main useful part and 27 species are employed in different treatments. Barks of 10 species and roots of 4 species are used in pre and post natal treatment. Out of 52 plants species, roots, rhizome and flowers are used very less. Twelve species of whole plants are significantly used for various preparations.

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