

Medicinal Plants used During Traditional Postnatal Care Practices in Rajasthan, India

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ABSTRACT Pali district of Rajasthan has powerful traditional practices in which plants play a key role. The present study endeavour to investigate and document the various medicinal plants used as traditional method of postnatal care of mother and children. A total of 120 rural women from randomly selected villages within the age group of 27 to 45 years were interviewed. The investigation revealed that 27 species of ethno medicinal plants were recorded belonging to 20 families used by the rural people of Pali district, Rajasthan for postnatal care practices. These medicinal plants were used as nutritious and medicinal preparations for postnatal care in the form of powder, decoction, laddu or haluwa etc. The mixture of different plant parts were also used for preparations. Most of the rural women (70 to 95%) used ethno medicinal preparation that is, dried ginger (*Zingiber officinale*) mixture, carom seed (*Trachyspermum ammi*), laddu, haluwa, edible gum (*Allium sativum*) laddu, harrira, fenugreek (*Trigonella foenum-graecum*) seed laddu just after delivery. Some of the popular formulations of carom, turmeric (*Curcuma longa*), nutmeg (*Myristica fragrans*), cloves (*Syzygium aromaticum*), garlic (*Allium sativum*) and asafoetida (*Ferula assafoetida*) were used by ninety percent rural women to give comfort to the baby from digestive disorders and cold and cough. These practices if unified with modern healthcare system could promote the health status of thousands of women and their neonate

INTRODUCTION

Postpartum maternal health care influences the health of both the mothers and their children to a great extent. Like prenatal care, the postpartum health care that is typically provided during the confinement period (six-weeks after childbirth) is very important to the mothers' health (Gedamu et al. 2018; Roman et al. 2010). The postnatal period is a critical phase in the lives of mothers and neonate. Most maternal and infant deaths and health problems occur during this time. However, this is the most neglected period in terms of quality care (Paudel et al. 2014; WHO 2014). Immune suppression (Puri et al. 2000), muscle weakness, pain, backache (Ticktin and Dalle 2005), insomnia, anxiety, depression (Boyd et al. 2005; Abdillahi and Staden 2013), urinary incontinence, constipation (Kabakian et al. 2014), mastitis and insufficient milk syndrome (Dewey et al. 2002) are common complications occurring during the postpartum period. The

emission of drugs in the mother's milk could result in harmful side effects in infants; therefore, a restricted number of medicines are used in lactation period (Gabay 2002; Roger and Gerald 2014). The use of ethno medicinal plants as substitute medicine during pre and postnatal period has been promoted worldwide. Yet, identification of potentially useful medicinal plants and scientific evaluation of their effectiveness and safety are important concerns (Roger and Gerald 2014). Medicinal plants have been used wisely during prenatal period to facilitate childbirth and during postnatal care by ethnic communities around the world. Traditional plant formulations are used in Nigeria to assist childbirth and to reduce delivery pain (Attah et al. 2012). In Brazil, medicinal plants are used in the treatment of health conditions related to confinement period and menstrual cycle (Yazbek et al. 2016).

Many traditional societies in rural areas have rich health traditions which are often followed in the form of customs and rituals on different occasions. The traditional health practitioners who are propagators of these traditions make use of medicinal plants in various practices, treatments and traditional recipes (Nergard et al. 2015). In India, ethnic communities recognize the importance of postpartum care of the mothers and the use of ethno medicinal plants for the

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management of postpartum complications, supporting the mothers to recuperate from the child-birth and regain the physical and emotional strength (Rajith et al. 2010; Kanwar and Sharma 2011).

The practices and attitude towards traditional medicine and role of women health practitioners has undergone a series of change (Lamxay et al. 2011; Jamal et al. 2011). With the development of modern science and medicine their traditional practices of nutrition and health are vanishing very fast. With the introduction of modern system of health and medicine and reducing recognition of traditional health practices of mother-child health care, this knowledge is rapidly disappearing (Deora and Rathore 2018).

This knowledge needs to be shared with the conventional health workers and local community members for safe use of medicinal plants. There is a need to protect this knowledge of using medicinal plants. It is equally important to bring traditional health practitioners and modern healthcare workers together so that each party could benefit from the other. An effort has been made through the present study to document plants used in health practices, treatments and recipes used as therapies during postnatal care in rural areas of India.

Study Area

Rajasthan is one of the largest states located in the Northwestern part of India. Geographically, it lies between 23°3' to 30°12' longitudes and 69°30' to 78°17' latitudes. The study area, Pali district of Rajasthan may be called sub mountainous and has undulated plains with scattered hills here and there. The south east of the district is traversed by the Aravalli range. The highest peak of these hills is about 1,099 meters. The general elevation in the plain varies from 180 meters to 500 meters and the slope is from east to west direction. Pali is located about 212 meters high above the sea level. The soil of the district is mostly sandy loam and the water level, in general is within 15 meters from the ground level. There is no perennial river in the district.

The climate of the district is on the whole dry and is very hot in summer and cold in winter. January is coldest month while May to early June is the hottest period of the year. Normal annual rainfall in the district is 50 to 60 centimeters. During the southwest monsoon period,

humidity, in general is high. In the rest of the year, the air is dry. The average humidity percentage for the district is nearly sixty to seventy.

METHODOLOGY

The clusters were chosen by purposive sampling to ensure traditional practices of rural from Pali, Marwar Junction and Rohat Panchayat Samities of Pali district of Rajasthan, India presuming traditional practices are common in rural clusters. From each panchayat samiti two villages were selected randomly. A roster of naming female (age between 27 to 45 years) of households of these villages was made. Total 120 respondents, 20 respondents from each village were selected from the roster by random sampling technique to interview. In addition to this, Vaidyas, *Pradhan/Sarpanch* (village chief) and *anaganwadi* workers of each village were interviewed. This was done with a view to gather more information about traditional postnatal care practices, nearest Public Health Center (PHC), facilities available in sub centers and PHCs, awareness amongst villagers about government sponsored health schemes, utilization of health facilities in the sub center, PHCs.

The fact of the matter is that notwithstanding of their educational qualifications they all were well conversant with the use of medicinal plants during postnatal care. All the informants were interviewed and the data was collected using a questionnaire. The questionnaire included information on name, age and profession of the family, source of the knowledge, name of the medicinal plant, part of the plant used, procurement of the useful part, various ingredients of the preparations, method of preparation, duration and the dose of the preparation. The results of the study were analyzed using simple statistical methods.

RESULTS AND DISCUSSION

During the ethno medicinal survey of the villages selected for the present study it was observed that the health services offered by Primary Health Centers (PHCs) in Pali district are not so good. The center has poor facility and the only service it is offering to the villagers is the distribution of tablets of fever, calcium, iron and antibiotics. The centers are reasonably well equipped with pediatrician, gynecologist and a

general physician. In spite of these facilities women do not make use of them for any health issue including delivery and postnatal care. The results of the survey showed that if women were not approaching these PHCs for delivery, etc., it was because of the distance of PHCs from their respective villages. The minimum distance of the PHCs from their respective villages was found to be 8-12 km. Secondly, they were also scared that doctor would put them to undergo caesarian delivery and it was their belief that C-sections would make them weak and frail. Through the study it was also found that though villagers were conversant about various government sponsored health schemes such as Janani Suraksha Yojana, National Ambulance Service 108 even then more than eighty percent deliveries took place at home in the presence of skilled traditional birth attendants or some experienced but untrained village woman. People visit these centers only when they have some very serious health issues (Dhillon et al. 2017). It could also be related with the health of their new born baby. But visit to the hospital for delivery or postnatal care was a rare phenomenon. The general trend observed was that people were found to depend on local resources and associated knowledge which was acquired by them from their elders (Probandari et al. 2017). The survey also shows that the village women have wealth of information on postnatal care and take an excellent care of mother and child.

The study revealed that there was a set tradition in each and every household that right after delivery, mother and her new born child would be confined in a separate room as the process of delivery was believed to be associated with impurity (Zeyneloglu and Kisa 2018). It was observed that this practice was strictly followed in all families residing in the study area. The period lasts for six days only. It was also observed that outside the confinement room cow dung cakes were kept in lightly burning form to which *Trachyspermum ammi* (carom seeds) were added periodically. The purpose of doing this was to keep the surroundings clean so that mother and child remain free from infection. It also keeps the body of mother and child warm. The smoke of *Trachyspermum ammi* (carom seeds) is beneficial in the treatment of cold and coughs, clears nasal congestion and alleviates headache. This reflects on antimicrobial, antifungal and bronchus-dilating function of the *Trachysper-*

mum ammi (Choudhury et al. 1998; Gilani et al. 2005; Dubey and Kashyap 2015). However, the general belief prevalent there was that it protects new born baby from evil's eye (Nethra and Udgiri 2018). Elderly lady taking care of the mother and child was always found cautious about visitors entering the room. She made sure that anybody entering the room warms his hands and feet in the slow heat of cow dung cakes. Therefore, it could be described as an indigenous method of sterilizing one's hands and feet which otherwise may carry some microbes and eventually protects mother and child from catching any infection. It could be correlated with the antibacterial, antifungal, anthelmintic, carminative and antiseptic properties of carom seeds (Bonjar 2004; Khanuja 2004). The essential oil present in the seeds of the plants contains approximately fifty percent thymol which has strong germicide, anti-spasmodic and fungicide properties (Joshi 2000; Bashyal and Guha 2018).

Rituals, Diet and Other Practices Followed During First Six Days after Delivery

The information gathered from the study area reveals that during the confinement period, in tradition, the mother's head is covered with scarf during day time. This is to prevent the loss of body heat through the head and it also helps to avoid catching ear infections or cold. Mothers offered very specialized food right after delivery. It was observed that for the first six days in each and every household new mother is given dried ginger powder mixture, *haluwa*, *laddu* and *harira*. The preparations described here are a combination of wheat flour, nuts, and spices and clarified butter (detailed preparation given under results separately). Traditionally food rich in healthy natural fats such as clarified butter, coconut and nuts are recommended for postnatal care. The general belief as narrated by the respondents is that these calorie rich food help to build healthy breast milk for the baby and replenish mother's body after delivery. This belief has been substantiated by other published reports (Jeet 2004). In fact, seeds of *Trachyspermum ammi* which are one of the ingredients of these preparations have been used traditionally as a galactagogue in humans (Kaur 1998; Bairwa et al. 2012). The various spices such as dried ginger, asafetida, carom added to these preparations is believed to induce digestive fire. Their

belief finds support in many published Ayurvedic as well as modern scientific research papers where the role of spices such as ginger, carom seeds and asafetida in enhancing digestion has been discussed (Sharma 2005). The sixth day was observed as *Chatty Pujan*. Prayers are offered to *Bae Mata* (Goddess of luck and future), *Kul Devata* (family God), and *Surya Devata* (Sun God). Sixth day onwards new mother was given easily digestible solid food which includes *Vigna radiata* (green gram), and curry made of green vegetables such as *Lagenaria siceraria* (bottle gourd), *Luffa aegyptiaca* (sponge gourd) and *Luffa acutangula* (ribbed luffa), etc. Literature survey reveals that *Lagenaria siceraria* is a rich source of triterpenoids, flavones and glycosides and has been used in traditional system of medicine as anti-hyperglycemic, anti-hyperlipidemic, anti-inflammatory, antibacterial and diuretic (Satvir et al. 2012).

It is worth mentioning here that in all households of the selected villages some dietary restrictions were imposed on women after delivery. For example, the use of *Vigna mungo* (black lentil), *Cicer arietinum* (bengal gram), *Cajanus cajan* (pigeon pea), *Cyamopsis tetragonoloba* (cluster bean pod), *Citrus limon* (lemon), *Solanum melongena* (brinjal) were avoided from the food given to the new mother (Table 1). Literature search reveals that a similar practice is observed in the rural areas of Karnataka where eating brinjal is avoided with the fear that it may cause eczema to the new born babies (Rao et al. 2014). Cluster bean, pigeon pea, and bengal gram are also not given to mother due to the logic that these are hard in digestion and create gas trouble. Lemon and citrus foods are not given since respondents believe that these citrus foods along with the medicinal food create reaction in body and can be harmful for mother's health.

The survey team also observed instead of plain water, new mother was given lukewarm medicated water prepared by boiling *Trachys-*

permum ammi (carom seeds) and *Syzygium aromaticum* (cloves). The logic behind this practice as described by the respondents was that it prevents from gastric problem. Through the study it was established that this practice is being observed throughout the area. Though the practice is traditional it is certainly based on strong scientific footing. Another practice followed very religiously in the study area was that mother and infant are given massage medicated oil (mentioned under results) every day. According to Ayurveda body massage with oil leads to toning up of muscles of pelvic floor, abdomen, back and vagina (Lakshmi et al. 2014). It has been reported that massage can prevent thrombosis because rubbing and friction during massage dilate blood vessels and improves blood circulation. After delivery, the tummy of mother is tied with a cotton *sari* or cloth. It is believed that it helps to push the uterus back and help to keep it in place. Belly binding also helps to get rid of the stomach gas, promote healthy posture during breast feeding, gently push the stomach muscles back together, and reduce stretch marks (Ud giri 2017). On tenth day prayers are offered in which mother along with her new born baby participates. It signifies the purification of mother who has undergone the process of delivery. After performing these rituals, she is allowed to come out of her room and from this point onwards she can start working in the kitchen. Thus confinement period serves as a time where mother can recover from the stress and pain. This practice again is quite scientific.

It is a well-established fact that the women require complete rest for some time after delivery. In these traditional households it is otherwise impossible for a woman to take rest for 10 days. So though, those 10 ten days are referred to as impure period it comes as a blessing for the new mother. The survey also reveals that in addition to the regular food, some specialized food items, herbal preparations made by using a combination of herbs, spices, and clarified butter (*Desi ghee*) are given to the new mother. All the

Table 1: Plants which are avoided during postnatal care

S.No.	Botanical name; Family	English (Hindi) name	Parts used	Types of plant
1	<i>Cajanus cajan</i> ; Fabaceae	Pigeon pea (<i>Arhar dal</i>)	Seed	Herb
2	<i>Vigna mungo</i> ; Fabaceae	Black lentil (<i>Urad dal</i>)	Fruit	Herb
3	<i>Cicer arietinum</i> ; Fabaceae	Chick pea (<i>Channa dal</i>)	Seed	Herb
4	<i>Cyamopsis tetragonoloba</i> L.; Fabaceae	Cluster bean (<i>Guwarfali</i>)	Pods	Herb
5	<i>Citrus limon</i> L.; Rutaceae	Lemon (<i>Nimbu</i>)	Fruit	Shrub
6	<i>Cucumis melo</i> ; Cucurbitaceae	Snap melon (<i>Kachra</i>)	Fruit	Climber

respondents were of the view that these preparations could help in relieving postpartum stomach pain, backache, general weakness and speed up postpartum recovery process (Withers et al. 2018). This diet regime is followed for minimum forty days and is practiced strictly in each and every house irrespective of the cast and community. Some variations in the recipe were definitely there. For example, families from poor background did not include dry fruits in their recipes but the basic preparation was same. The study reveals that that these preparations certainly have positive impact on woman's body and could be categorized as functional food. The detailed information on some important preparations used and treatments practiced during postnatal care has been given below. The various medicinal plants used in postnatal care have been given in Table 2 with detailed information on part of the plant used, botanical names etc.

Dried Ginger (Saunth) Mixture

Dried ginger powder (*Zingiber officinale Roscoe*), jaggery (*Saccharum officinarum*) and desi ghee mixture is given to mother in early morning for seven days. Ginger is listed amongst

popular lactogenic foods effectively increases production of breast milk (Paritakul et al. 2016). The elements or the ketones present in ginger boosts the immune system and reduce conditions of inflammation. Additionally ginger helps reduce the health discomforts of nausea, vomiting, and cell death.

Carom Seed Laddu

Laddu of carom (*Trachyspermum ammi*) seed powder, jaggery (*Saccharum officinarum*) or fine sugar and melted clarified butter mixture is given to mother. According to Ayurveda, carom is a powerful cleanser. It is helpful for stimulating the appetite and enhancing digestion. It is recommended to help alleviate gas and discomfort in the stomach. It is also helpful for the functioning of the respiratory system and the kidneys. Stomach disorder due to overeating can be treated with carom as it acts like a panacea for such problems (Goyal 2017).

Nutritious Milk

Add fine sugar, opium seed (*Papaver somniferum L.*) powder (one spoon) and 4-5 dates in

Table 2: Medicinal plants used during postnatal care

S. No.	Botanical name; Family	English (Hindi) name	Parts used	Types of plant
1	<i>Trachyspermum ammi (L.)</i> ; Apiaceae	Carom (<i>Ajwain</i>)	Seed	Herb
2	<i>Zingiber officinale Roscoe</i> ; Zingiberaceae	Dried Ginger (<i>Saunth</i>)	Rhizomes	Herb
3	<i>Curcuma longa L.</i> ; Ziniberaceae	Turmeric (<i>Haldi</i>)	Rhizomes	Herb
4	<i>Trigonella foenum-graecum L.</i> ; Fabaceae	Fenugreek (<i>Methi</i>)	Seed	Herb
5	<i>Phoenix dactylifera L.</i> ; Aarecaceae	Dates (<i>Khajoor</i>)	Fruit	Tree
6	<i>Papaver somniferum L.</i> ; Papaveraceae	Opium seed (<i>Khaskhas</i>)	Seed	Herb
7	<i>Syzygium aromaticum L.</i> ; Myrtaceae	Cloves (<i>Laung</i>)	Flower bud	Shrub
8	<i>Citrullus lanatus</i> ; Cucurbitaceae	Water melon (<i>Magajbeej</i>)	Seed	Climber
9	<i>Vigna radiate</i> ; Fabaceae	Green gram (<i>Moong dal</i>)	Seed	Herb
10	<i>Lagenaria siceraria</i> ; Cucurbitaceae	Bottle gourd (<i>Lauki</i>)	Fruit	Climber
11	<i>Luffa aegyptiaca</i> ; Cucurbitaceae	Sponge gourd (<i>Torai</i>)	Fruit	Climber
12	<i>Luffa acutangula</i> ;Cucurbitaceae	Ribbed luffa (<i>Torai</i>)	Fruit	Climber
13	<i>Cuminum cyminum L.</i> ; Apiaceae	Cumin (<i>Jeera</i>)	Seed	Herb
14	<i>Piper nigrum L.</i> ; Piperaceae	Black pepper (<i>Kali mirch</i>)	Fruit	Herb
15	<i>Saccharum officinarum</i> ; Gramineae	Jaggery (<i>Gud</i>)	Stalk juice	Herb
16	<i>Myristica fragrans Houtt</i> ; Myristicaceae	Nutmeg (<i>Jaiphal</i>)	Fruit	Herb
17	<i>Ferula assafoetida L.</i> ; Apiaceaeoleogum	Asafetida (<i>Hing</i>)	Resin	Herb
18	<i>Acacia leucocephala</i> ; Mimosaseae	Edible gum (<i>Gond</i>)	Resin	Tree
19	<i>Allium sativum L.</i> ; Amaryllidaceae	Garlic (<i>Lahsun</i>)	Bulb	Herb
20	<i>Coriandrum sativum L.</i> ; Umbellifers	Coriander (<i>Dhania</i>)	Seed	Herb
21	<i>Foeniculum vulgare</i> ; Umbellifers	Fennel (<i>Saunf</i>)	Seed	Herb
22	<i>Brassica campestris L.</i> ; Brassicaceae	Mustard (<i>Sarson</i>)	Seed	Herb
23	<i>Triticum aestivum L.</i> ; Poaceae	Wheat (<i>Gehun</i>)	Seed	Herb
24	<i>Cocos nucifera L.</i> ; Arecaceae	Coconut (<i>Nariyal</i>)	Fruit	Tree
25	<i>Cicer arietinum</i> ; Fabaceae	Bengal gram (<i>Chana dal</i>)	Seed	Herb
26	<i>Gossypium arborea Roxb. L.</i> ; Lamiaceae	Cotton (<i>Rui/Kapas</i>)	Pod	Shrub
27	<i>Sesamum indicum L.</i> ; Pedaliaceae	Sesame (<i>Til</i>)	Seed	Herb

one and half glass milk, then boil on low flame for 15 minutes, then add one spoon clarified butter in it and give three times in a day to mother. These are good source of energy and help to overcome physical weakness (Khalid et al. 2017). It was found that this preparation was used by sixty-five percent population of the studied area.

Haluwa

The preparation is made from wheat (*Triticum aestivum L.*) flour, jaggery (*Saccharum officinarum*) and clarified butter. Wheat flour is roasted with clarified butter for few minutes, then hot water is added to it. After it is mixed well, jaggery is added. The final product is a semi-solid preparation. Jaggery purifies blood and improves digestion. It is a good source of iron so it is a great remedy for women suffering from anemia (Altuntug et al. 2018).

Edible Gum Laddu

Deep fry edible gum (*Acacia leucocephala*) and few black pepper (*Piper nigrum L.*) in clarified butter, then roast wheat (*Triticum aestivum L.*) flour with clarified butter and add fine sugar, grated dried coconut (*Cocos nucifera L.*), water melon (*Citrullus lanatus*) seeds and dates (*Phoenix dactylifera L.*). All these ingredients are mixed together and ball shaped preparation (*laddus*) are made. These *laddus* are high in calories and is required to meet the extra calories needed by a new mother while breastfeeding the newborn (Causik and Hickey 2016). The *laddu* is believed to speed up recovery and provide her with vital nutrients to regain her strength after delivering a child.

Harrira

Clarified butter is melted in heavy bottomed vessel to which jaggery (*Saccharum officinarum*), turmeric (*Curcuma longa L.*) powder and some of water are added. Boil on low flame till *harrira* comes in semi-solid form. Prepare this mixture daily and eat it early morning. The recipe is believed to provide strength to the mother's body and makes the immune system strong (Singh et al. 2017).

Fenugreek Laddu

Soak broken fenugreek (*Trigonella foenum-graecum L.*) seeds in milk overnight then roast

in clarified butter. Roast wheat (*Triticum aestivum L.*) flour in clarified butter then add roasted fenugreek seed and sugar or jaggery (*Saccharum officinarum*). Mix this mixture well and make balls (*laddu*). Fenugreek is good for digestion and potential stimulator of breast milk production in lactating mothers. Fenugreek seeds are rich in calcium, iron, phosphorus, protein and minerals (Venkata et al. 2017).

Cumin Seed Laddu

Mix cumin (*Cuminum cyminum L.*) seed powder, jaggery (*Saccharum officinarum*) and melted clarified butter well and make balls (*laddu*). Cumin seeds are believed to improve saliva secretion which provides relief in digestive disorders. It helps in constipation and acidity relief (Asrani et al. 2018). This is a great source of iron and it is believed traditionally that it improves breast milk. It was observed that ninety percent population living in study area used it.

Coriander-Fennel Seed Laddu

Mix coriander (*Coriandrum sativum L.*) seed powder and fennel (*Foeniculum vulgare*) seed powder in melted clarified butter and fine sugar and then make *laddu*. These all ingredients have cooling property and given to the mother at last after giving all medicinal *laddu* and preparations. Coriander and fennel seed have cooling properties. After giving carom seed, dried ginger powder, and turmeric powder (hot property), give coriander and fennel *laddu* which makes body cool and relaxes digestive system. These are also helpful in increasing breast milk of lactating mothers (Sivadasan et al. 2014). This preparation is used by seventy to seventy-five percent population residing in these villages.

Postnatal Care of Children

The survey of selected villages also reveals the local practices followed for maintaining the general health of newly born child. It was observed that there are some homemade herbal formulations which are widely used in this region for strengthening the digestive system and immune system of the infants. The survey team also came across some preparations of collyrium which was commonly used in majority of households. Some of the popular formulations

used during postnatal care of new born babies have been described below:

Janamghutti

A newborn baby is often fed honey or jaggery (*Saccharum officinarum*). It is believed to be auspicious for the baby. Respected and admired person of the family gives *janamghutti* to the baby first time just after birth (Goel et al. 2015).

Kajal (Collyrium)

Cotton wick is rolled over dried seeds of *Trachyspermum ammi*, dipped in mustard oil and is lighted. Carbon coming as smoke from the wick is collected in a vessel and is used as collyrium. It is used twice a day and is believed to improve the vision of the baby (Khan et al. 2013). The researchers' study reveals that this preparation is used in ninety to ninety-five percent households.

Lep/Ubtan (Body Pack)

This is made of *Cicer arietinum* (bengal gram flour), *Triticum aestivum L.* (wheat flour) and *Brassica campestris L.* (mustard oil). The preparation is used to remove facial and extra hair from the infant's body (Netra and Udgiri 2018). It was observed that sixty-five to seventy percent population residing in selected villages makes use of it.

Massage Oil

Trachyspermum ammi (carom seed), *Allium sativum* (garlic) and *Trigonella foenum-graecum* (fenugreek seeds) are added to the mustard oil or sesame oil and heated. The oil is used for giving massage to the infant and mother (Reshma and Sujatha 2014). It provides muscular strength to the mother and child and is used in ninety to ninety-five percent households.

Mustard Pillow

A pillow made of *Brassica campestris L.* (mustard seeds) instead of cotton filling is commonly used for infants. It helps provide round shape to the baby's head. It is used al-

most in each and every house located in study area.

Medicinal plants described in this study for the postnatal care of mother and infant, the part of the plant used and the family they belong to have been listed in (Table 2).

Decoction Made Using a Combination of Medicinal Plants

Cold and cough, constipation, digestion problem and stomach gas are common phenomenon experienced by majority of child after birth. To overcome these problems, child is given decoction made from the different medicinal plants to get rid of these complications. Decoction of carom (*Trachyspermum ammi*) seed, turmeric (*Curcuma longa L.*) powder, nutmeg (*Myristica fragrans Houtt*) and half roasted clove (*Syzygium aromaticum L.*) are used to give comfort to the baby from digestive disorders and cold and cough. In cold and cough condition they also give small amount of mesh garlic with warm water to the baby (Pushpangadan and George 2010). Mothers apply powdered *Ferula asafoetida L.* (*hing*) or carom seeds boiled water on a baby's navel to reduce colic and improve digestion. Sometimes the powdered *asafoetida* is mixed in little water and 2-3 drops are given to the baby for relief in gas trouble (Sahu et al. 2015). The results of the study revealed that this practice was followed in ninety percent of the households located in the study area.

CONCLUSION

The health practices whether they are related to traditional food or formulations described in this study involve the use of a total of 27 plants. They belong to 20 different families. Out of 27 species, 18 are herbs, 3 trees, 2 shrubs and 4 climbers. The analyses of different preparations/formulations used for postnatal care include various parts of the plants such as fruit, seed, rhizome, latex, resin and bulb. The various preparations recorded here employ seeds of 12 plant species, rhizomes resin of 2 plant species each, fruits of 7 plant species, bulb, flower bud, stalk and pod of one species. Each find mention in different preparations used during postnatal care but in none of the preparations, stem, leaves flower and bark have been used. The information collected through this study throws light

on the potential of local health practices. They may not sound sophisticated but their relevance even in today's time cannot be undermined.

RECOMMENDATIONS

This traditional healthcare system has been taking care of rural women for centuries but it has not been able to reduce mortality death of mothers during delivery, Therefore, if these practices are combined with modern scientific healthcare system the condition of women in rural areas may improve greatly. Similarly, the knowledge of these traditional practices to the urban women could be of great use. The benefits of these practices are time tested and it is also a known fact that these practices have no side effects. Therefore, to conclude it can be said that these health traditions are our traditional heritage which needs to be preserved and percolated in the society.

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