



Tribal Medications Used in Thar Desert

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ABSTRACT: In this paper an attempt has been made to study the traditional medical system among tribals of Thar desert. The traditional medicinal care practiced in the area having both herbal as well as ritual form of curing is not considered important by official agencies. The cultural importance of ritual cure and role of medicinal plants (their properties as they relate to healing, their symbolic values and their procurement from environment) in the traditional medical system of tribals is of great value. It can be seen from the appendix I that there are large number of illnesses where oral application of herbal preparations are a frequent part of the treatment (e.g) fever, dysentery, diarrhoea, Malaria, cough and cold, eye ailments, Guinea worm (Nadu), stomachache etc). But, at some point the tribals see the limits of such phytotherapeutic forms of treatment. Any illness that is associated with severe pain, long lasting and is not responding to any herb requires help of the supernatural. The tribals relate their ritual needs to supernatural powers and ask for help and forgiveness. The state sponsored medical system do not look “at indigenous medicine” as a whole and fail to see the sociocultural basis of its uses.

KEYWORDS-tribals, thar, desert, medication, culture, supernatural

I. INTRODUCTION

The traditional medical uses of 87 plant species belonging to 32 families were reported on. Amaranthaceae was the most-frequently cited (nine species), followed by Cucurbitaceae and Euphorbiaceae (six species each). The most dominant life form was herbs (73.56%). The most-used plant parts were leaves, with 65 reports (28.88%), followed by seeds (16%). The common mode of preparation reported was powder (25.75%), with 74% herbal medicines obtained from fresh plant materials.

The ethnobotanical result documented in this study provides practical evidence about the use of medicinal plants among the inhabitants of the Thar Desert. Further, the findings revealed that the medicinal plants of the area are a major source of herbal drugs for primary health care used among the rural communities.

The tribal communities of thar desert are the autochthones having age-old customs and traditions. There is enormous diversity among the tribal communities as their locations vary. Majority of the scheduled tribes (nearly 90%) live in rural area with many of them living in the extremely inhospitable areas of India. This diversity is closely linked to the health problems, health-care resources, and its utilization as well as the quality of available health care. Although it will not be appropriate to label something as tribal medicines as there is enormous diversity in the tribal societies and correspondingly in their medicines [1], yet, we may think of most commonly occurring characteristics of the tribal medicines. Firstly, the tribal medicines are largely related to specific cultural milieu. Thus, 705 ethnic groups would imply 705 cultural flavors in the medicines. The tribal societies differ not only in the conceptualization of disease and its causative theory and classification but also in the way it is prevented and treated as well as the personnel who are identified as healers. However, the medicinal domain is also relatively more flexible and therefore is amenable to change, especially in the material and technological aspects, while the ideological aspect remains rather rigid. Secondly, the magico-religious aspect of the tribal medicines is very significant, and it relates not only to the realm of supernatural beliefs and practices but also in the use and prescription of material-based medicines and techniques. Thirdly, tribal medicines are holistic, and thus the beliefs about disease and practices for health care are intermeshed in myriad other aspects of sociocultural life of the people. In particular, the moral and political aspects of the social life are reinforced by the medical beliefs. Finally, the tribal medicines are closely interacting with the biomedicines on the one hand and the new religious ideologies to which some of the tribal communities are converting on the other. In the process, with alternative and sometimes contradictory options on the scene, the tribal medicines are rapidly changing and are almost endangered. The mortality among the scheduled tribes due to tuberculosis, tetanus, diarrhea, malaria, hemoglobinopathy, and sickle cell anemia is very high. More than three-fourth of the scheduled tribe children are anemic. The morbidity rate of asthma among the scheduled tribes is higher than the other category of people. Similarly, due to very heavy intake of tobacco and alcohol among the scheduled tribes, cancer- and liver-related ailments are high among them. Being living in the relatively isolated and remote regions of the country, the scheduled tribe population is underserved as far as the health service delivery is concerned in spite of the fact that there is a provision of having a



health facility on every 3000 people as against 5000 people for the other category of people. Thus, only one-third of the tribal children are fully immunized making a large majority of children susceptible to large number of preventable diseases. As a consequence, child mortality and under five child mortality rates are highest for the scheduled tribes than for any other social group in India. Furthermore, more than 70% of the deliveries are conducted at home among the scheduled tribes. The scheduled tribe population was traditionally suffering from infectious disease due to poor preventive and curative health-care services. But, the health-related problems have further increased as they have additionally acquired the burden of noncommunicable lifestyle diseases. A plethora of agents and agencies are identified by the scheduled tribe communities as causing diseases. Firstly, the belief in health as a balance of natural forces gives rise to humoral imbalance as the causative agent for disease. Under such a belief system, different foods and drinks, activities, and living conditions are categorized under “hot-cold” categories, and any violation in the behavior is held as a cause of disease requiring appropriate healing action. Wrath of gods is another commonly held cause for disease and misfortunes in the tribal communities. Such conditions arise because people make promises to the divinities and later on do not fulfill their promises and in the process anger the divine forces which manifest their anger in the form of disease and misery. Involuntary possession by culturally postulated evil forces such as ghosts, demon, visitants, and wights is a very widely prevalent cause for diseases involving behavioral disturbances among many scheduled tribes. Magic and sorcery are another popular causes of disease under which the black magicians are able to cast magic by means of controlling supernatural powers.[1,2,3] Evil eye as a belief is also a very well-known cause of diseases to people, especially newborn and infants. In many scheduled tribe areas, belief in witchcraft is held as a cause responsible for the diseases and deaths to the people. Particularly in the central Indian tribal regions, the witchcraft accusations have been used as excuses to blame and often kill hapless women. Breach of taboo is also believed to be a cause of disease in many scheduled tribe communities, generally prevailing in communities where there is condition of hierarchy or social distance, where the breaching of the taboo with respect to sharing of food or other prohibitory activity is held to be a cause of disease. Magico-religious practices are very closely associated with tribal medicines, and this fact is quite clearly reflected in their medicinal beliefs and treatment actions. However, there is very close relationship between magico-religious beliefs and therapeutic actions that are undertaken to treat the disease inducing cause. The tribal medicinal beliefs are very closely intertwined with the ecosystem which includes the forests, agricultural fields, rivers, streams, ponds, mountains, and other landmarks of the surroundings – both visible and invisible. Invariably, in between the human need and the actual use of the natural resources are the guarding spirits which are held as the custodian and owner of such resources. The diseases are explained as a cause when the human beings do not follow the known rules for the use of the natural resources whether these are in the form of floral or faunal or even the mineral and rocks. Besides custodians of nature, myriad other spirits are believed to exist in the outer world. These are the family and clan deities, the village and domestic animal deities, and the benevolent and malevolent deities. The becoming of sick by them is interpreted in the realm of disturbed relationship with these spirits. The treatment of magicoreligiously caused disease involves treatment in a ritualistic manner under the able guidance of a known expert. Quite often, such rituals, depending upon the gravity of the situation, 2 Tribal Medicines demand animal sacrifice and elaborate feasts to the fellow villagers. Besides curative practices which involve rituals, prayers, penance, charity, and other forms of appeasement and corrective practices, there are scores of preventive actions that people know of and rely upon to prevent the onslaught of the magico-religious forces upon them. The preventive practices involve the use of charms, amulets, and others forms of deterrents which are believed to stop the incoming of the magico-religious influence. [4,5,6] Sometimes there are community-level preventive measures which are adopted to save the entire village from such forces. Under such circumstances, the entire boundary of the villages is magically protected through elaborate rituals. The tribal people of India have a very close relationship with their forest, and it is for these reasons they are often referred to as vanvasi or vanyajati. The tribals view their forests not as giver of resources to be exploited but as an extension of their own self. This attitude is amply reflected in their use of forest-based medicinal resources. The medicines are held to be sacred containing “powers” obtained from the blessed forces. The forest-based medicines are generally known to the special class of people called the herbalists. The herbalists generally learn their skills under some senior herbalist or through self-gained knowledge. In different tribal communities, the herbalists are known by different names. The forest-obtained medicines are used for bone setting; physical disease symptoms such as diarrhea, malaria, jaundice, fever, skin diseases, and weakness, during and after pregnancy; and many more occasions. Much before the biomedicines came into existence, the tribal people have been using plants, animals, and minerals from their forests as medicines. This knowledge has been obtained by hit and trial, by observing animal behavior, by observing natural signs on the plants, and by interacting with the knowledgeable herbalists. The knowledge about forest-obtained medicines is generally kept secret by the people.[7,8,9] They fear that if they divulge about such medicines, the “power” of medicine to heal will vanish. It is for this reason that they do not share this knowledge even with their close family members till an appropriate time when they feel they need to transfer this knowledge to a worthy person. A wide variety of socially recognized people are found in the tribal communities who act as healers at the time of need. Broadly speaking, the tribal healers can be categorized into two groups – the natural healers and the supernatural healers. The natural healers consist of herbalists who are knowledgeable of the



plant-, animal-, or mineralbased medicines. Generally, such healers also make use sphygmological observations for ascertaining the nature of humors to prescribe a medicine. Sometimes, these herbalists exclusively deal with one disease and carefully guard their medicinal knowledge. The traditional birth attendant is one of the main natural healers who has access to herbal knowledge which is used for various gynecological purposes as well as for procreation of a healthy child besides knowing herbs for abortion and ease in delivery. The supernatural healers among the scheduled tribes are a very wide category. Basically, such healers can be classified into two groups, namely, the magical and religious. In many cases, these two categories of healers are different, but at times one healer may combine both the roles. The healers relying upon magical powers are generally feared by the people as they are known to have mastered over the evil spirits through whom they can cast spell on people or perform sorcery over them. The healers making use of religious sphere generally know how to appease the spirit which is generally of benevolent type. As diviner or mediums, these healers not only act as mediator between lay people and the supernatural spirits but also know how to perform required ritual or supernaturally conducive action. The tribal healers everywhere have come under direct contact with the biomedicine or AYUSH doctors which is resulting in changing health-seeking behavior. There is direct conflict between the herbalists and the doctors, but even the supernatural healers are being challenged for their unverifiable practices. In many places, they are under criticism and attack. However, there is also resurgence of interest in the traditional healers.[10,11,12] In both these places, there has been a concerted effort by the people with government support to incorporate the traditional healers into the mainstream. The traditional knowledge of plant-based medicine of the scheduled tribes of India has been a matter of great concern as there is a real danger of unscrupulous drug dealers taking away this precious knowledge for commercial exploitation. The scheduled tribe community which has been the custodian of this knowledge for centuries would be devoid of its legitimate profit which will unlawfully go to the biopirate. This is becoming a real danger because there is worldwide search for the indigenous medicines as an alternative to side effect-prone biomedicine. At a time when the global market for the herbal drugs is of 43 billion US dollars, there is cut-throat competition for seeking new and pristine knowledge about the tribal medicines. In a situation where only 1 out of 10,000 molecules comes out to be of medicinal use, knowing from the scheduled tribe is definitely going to save a lot of money for a drug company. Already, people in America and Japan have filed patents for known Indian medicinal plants like Ashwagandha, Kala Jeera, Kumari, Amaltas, etc. The scheduled tribe of India has been using a large number of plants for many diseases, and there is a real danger of this knowledge getting pirated. There is need to carefully protect the intellectual property enshrined in the tribal medicines so that its commercial profits are shared by the tribals who are the real owners of the medicines. The tribal medicines are under great threats. This threat is more in the area where the scheduled tribes are getting disempowered due to forced resettlement and rehabilitation. As the tribals are relocated from their natural forested habitat, the tribals are consistently loosing on their indigenous knowledge pertaining to traditional medicines. At the same time, we also notice a trend where the educated elite are not only documenting but even demanding protection of their medicinal knowledge. This is particularly happening in tribal areas which are becoming politically and economically better off. The future of tribal medicines in such a scenario is not totally bleak as along with the effort to establish renewed identity, there is earnest attempt to rediscover the indigenous medicines as well.

II.DISCUSSION

The traditional uses of medicinal plants in healthcare practices are providing clues to new areas of research; hence its importance is now well recognized. However, information on the uses of indigenous plants for medicine is not well documented from many rural areas of Rajasthan including thar desert. The study aimed to look into the diversity of plant resources that are used by local people for curing various ailments. Questionnaire surveys, participatory observations and field visits were planned to elicit information on the uses of various plants. It was found that 68 plant species are commonly used by the local people for curing various diseases. In most of the cases (31%) leaves were used. The interviewees mentioned 188 plant usages. Those most frequently reported had therapeutic value for treating fever, rheumatism, diarrhea, asthma and piles. The knowledge about the total number of medicinal[13,14,15] plants available in that area and used by the interviewees was positively correlated with people's age, indicating that this ancient knowledge tends to disappear in the younger generation. The study reveals that more than 80% of the rural people depend for their primary healthcare on folk medicine, mainly of plant origin. According to survey, the people of thar desert used 68 different plant species belonging to 32 families for curing various ailments, out of which 28 were herbs, 16 shrubs, 13 trees and 11 climbers and twinnings. The study has brought to light some 188 folk recipes, used currently by the traditional healers of various cultures in thar desert of Rajasthan. The traditional uses of medicinal plants in healthcare practices are providing clues to new areas of research; hence its importance is now well recognized. However, information on the uses of indigenous plants for medicine is not well documented from many rural areas of Rajasthan. Questionnaire surveys, participatory observations and field visits were planned to elicit information on the medicinal plants used by local community of Jodhpur district of Thar desert. The use of 21 plants distributed into 17 families is described. The medicinal plant preparations were applied through different routes of administration like oral,



topical or dermal and nasal routes. However, oral application was the highest and most commonly used route of application followed by topical or dermal. Major findings were use of *Abrus precatorius* for urinary disorders, abortion and contraception; *Achyranthes aspera* for asthma, cough and gynecological purpose; *Acacia catechu* as astringent, antidiarrheal, haemostatic and for treatment of skin diseases; *Capparis decidua* antidiabetic, hypolipidemic, analgesic and anti-inflammatory; *Euphorbia caducifolia* cutaneous eruption, leucoderma, earache and *Ziziphus nummularia* as antidiarrheal and anti-infective for skin.

III.RESULTS

About 500 tribal communities are representing 7.76 per cent of the total population of the country. It is spread over 19 per cent of the total area of the nation. Rajasthan has 8 percent of the tribal population of India which is common in Udaipur, Banwara, Bhilwara, Kota Jhalawar and other hilly areas of the state. These tribal people use large amount of plants for the medicinal purposes, such studies fall under “the study of the relationship which exists between people of primitive societies and their plant environment”.

RAJASTHAN

The state of Rajasthan has total land area of the state is about 3,24,239 km², out of which about 1,98,100 km² is arid and the rest semi arid. [16,17,18] Rajasthan is situated between 23°3' and 30°12' N latitude and 69°30' and 78°17' E longitude. Out of the total area, forests cover only about 37,638 km² and are rich in biodiversity. A major portion of western Rajasthan has desert soils and sandy plains.

The average annual rainfall in the state is 525-675 mm, and the annual precipitation in different tracts of Rajasthan varies from 13 mm to 1766 mm. Vegetation on hilly tracts: Majority of hills in Jaipur are almost barren. However Hills in the Amber region have *Anogeissus pendula*, *Boswellia serrata* and *Sterculia urens* along with *Butea monosperma*, *Sterculia urens*, *Commiphora wightii*, *Anogeissus pendula*, *Boswellia serrata*, *Lannea coromandelica*, *Rhus mysorensis*, *Adina cordifolia*, *Diospyros melanoxylon*, *Wrightia tinctoria*, *Cassia fistula*, *Aegle marmelos*.

Cordia gharaf and *Ficus racemosa*. Some of the Shurbs of common occurrence are:

Grewia damine, *Melhanian hamiltoniana*, *Plumbago zeylanica* and *Lantana indica*.

Plants for human health and welfare: Plant have been associated with the health of mankind from times immemorial. These practices have gradually developed into a system of medicine like-Ayurveda. The methods and practices of healthful living and herbs for relief of ailments enunciated in Ayurveda are in vogue in Indian households even today.

The tribals: Tribals are the oldest ethnological groups which live far away from the civilized world. They prefer to live in forested areas, follow primitive customs and occupations, profess primitive religions, have common language and social culture, are economically dependent on each other. The total tribal population of Rajasthan state is 5, 474, 881 which is 12.44% of the total population of this state. [18,19,20] The tribals of Rajasthan constitute 8.07% of the total population of tribals in India. On the basis of distribution of various tribes the state can be divided into four different zones.

I. First Zone: In this zone the districts of southern areas are included. These districts are Banswara, Dungarpur, Udaipur and Chittorgarh where ‘Bhils’ and ‘Damors’ are residing.

II. Second Zone: It includes Sirohi and Pali districts where ‘Garasia’ is the dominating tribe.

III. Third Zone: It has Jaipur, Sikar and Alwar districts where ‘Meena’ tribes reside dominantly.

IV. Fourth Zone: In this zone Tonk, Bundi, Jhalawar and Kota districts are included where ‘Bhil’ and ‘Meena’ form the dominating tribal population.

The Meena population (3,68,025) is found majority in Jaipur district and other tribal population e.g. ‘Bhil’, ‘Kalbelia’, ‘Gadia Lohar’, ‘Banjara’, ‘Kanjara’, ‘Sansi’ and ‘Bauria’ is found in minority.

Wild medicinal plants in Indian Folk Life-A Historical Perspective: Plants of over 3500 wild species are used to cure ailments in man and his domesticated animals:

Some folkore medicines of the thar region have proved efficacious after detailed pharmacological and clinical trials. *Rauwolfia serpentina* roots are a classical example. *Coptis teeta* is another plant which has given encouraging results. The oil of seed kernel of *Hydnocarpus kurzii*, has proved useful in the treatment of leprosy and skin diseases. The roots of *Nardostachys grandiflora* have provided a safe sedative.

Some plants are used singly, whereas others are used in mixture. Similarly, certain plants were considered useful in only one disease whereas several had multiple uses. Many medicinal uses reported by tribals appeared to be unknown or little-known outside their community. Examples of a few such plants are given below:

Some noteworthy plant species which are used in the treatment of various diseases are *Boerhavia diffusa* (Elephantiasis), *Hemidesmus indicus* (Stomach ulcer), *Indigofera cassioides* (Antifertility agent), *Leea macrophylla* (Chest pain). *Ricinus comunis* (Antifertility agent).

Some of the important plants of thar region are given below:

1. *Achyranthes aspera* L. (Amaranthaceae) 'CHIRCHITA' About 50g root crushed with 10g Sonth (*Zingiber officinale* Rosc.) and Bach (*Acoru calamus* L.) half teaspoonful powder with two teaspoonful honey is prescribed for 3-4 days for leucorrhoea.[19,20]
2. *Asparagus racemosus* Willd. (Liliaceae) "SATAWARI" Root paste is applied locally on joint pain.
3. *Boerhavia diffusa* L. (Nyctaginaceae) "PUNARNAVA" About half teaspoonful root juice taken for seven days for paralysis.
4. *Calotropis procera* (Ait.) R.Br. (Asclepiadaceae) "AAK". Latex of the plant with mustard oil is boiled and applied locally for bodyache.
5. *Hemidesmus indicus* (L.) R.Br. (Asclepiadaceae) "Anantmul" Fresh roots crushed with 8-10 black pepper (*Piper nigrum* L.) About 2g powder given orally on empty stomach for 7 days for stomach ulcer.
6. *Madhuca longifolia* (Koen.) Macb. (Sapotaceae) "MAHUA" About half teaspoonful powdered root of tender plant taken for abdominal pain.
7. *Ziziphus mauritiana* Lam. (Rhamnaceae) "BER" About 10 g root, 25g Kali musli (*Curculigo orchioides* Gaertn.) and 5g sonth (*Zingiber officinale* Rosc.) powdered with butter oil and made into pills; two pills given twice a day for asthma.

Some of the plants used by thar tribals are given below:

Acacia catechu, Get-langhan (Santhal),

Root made into a paste and applied on the joints for seven days for rheumatism.

Cassia tora, Chakar (Oraon); Chakunda (Khond), Root made into a paste and along with the powder prepared from the horn of a cow, given orally once daily in high fever and to a patient who is unable to speak and hear.

Hibiscus rosa – sinensis

Urhul (Santhal), Flower bud made into a paste which is prescribed in impotency, once daily on an empty stomach for seven days.

Terminalia alata

Karaka (Khond); Aswan (Hindi)

Two to three leaves from a fresh twig made into a paste and given three times a day for one day in vomiting and loose motions.

Xeromphis spinosa

Dudri (Munda); Nisawala (Birhor)

Stem bark made into a paste and mixed with goat's milk and country liquor. This is prescribed in rheumatism once daily on an empty stomach for 15 days.

RAJASTHAN (Hadoti Plateau)-thar-Ethnobotanical studies in Rajasthan were conducted. The following medicinal plants are distributed in various districts of Rajasthan:

1. *Chlorophytum tuberosum*: This plant mainly found in Udaipur, Chittaurgarh, Banswara, Dungarpur, Baran district of Rajasthan.
2. *Asparagus racemosus*: Cosmopolitan.
3. *Calotropis procera*: This plant mainly found in Kota, Baran and Udaipur district of Rajasthan.

Plants during present investigation following data was recorded:

Acacia nilotica (L). Willd. (Mimosaceae) Babool or Barodi kikar.

It is a moderate – sized tree, pinnae 4-9,pairs, stipular thorns long, heads yellow, pods,stalked. Loc. Jhirniya
Flowering and Fruiting: October – February. Medicinal Use: Comparatively younger and softer twigs of the tree are used for massage of gums and cleansing of teeth.

Paste of stem bark is applied locally for abdominal pain.[20]

Azadirachta indica (A.Juss.) (Meliaceae).Neem or Neemda. A large evergreen tree.

Leaves compound, leaflets, sub-opposite. Flowers white in panicles, drupes oval oblong, yellow when ripe. Loc. Khasa radi, Jhalawar.

Flowering and Fruiting: March-August, Medicinal Use: The tree has got widespread medicinal value in the locality; fresh leaves are chewed, as blood purifier. Paste of leaves, is utilised for the treatment of skin diseases.



Butea monosperma (Lamk.) Taub. (Fabaceae) Ver. Khankera Palas. A medium sized deciduous tree, leaflets three rhomboid, flowers orange red showy, pods flat. Loc. Jhirniya. Medicinal Use: The seeds are crushed into powder. This powder is mixed with lemon juice and applied thrice a day on ringworm for seven days and is said to be efficacious.

Calotropis procera (Ait.) R. Br. (Asclepiadaceae) Ver. Ankda.

A large erect lactiferous shrub. Leaves ovate obovate, flowers purple white, follicles recurved. Loc. Talai. Flowering and Fruiting: Most part of the year.

Medicinal Use: Two drops of latex from fresh leaves of the plant are applied on the nails of both the toes. This practice is repeated for three days, twice a day. Absolutely effective in treatment of conjunctivitis (eye flu) Asclepiadaceae has great religion value.

Ocimum canum L. (Lamiaceae) Ver. Bantulsi An erect branching herb, leaves ovate-lanceolate. Flowers pinkish white, nutlets, black pitted.

Loc. – Lotiajhir

Flowering and Fruiting: August-February

Medicinal Use: This plant is very useful for the tribals of the area, mostly used for the treatment of diversified ailments but specifically the hot poultice of leaves and inflorescence is applied on the right side of the abdomen to cure appendix pain. The poultice is applied twice for three days.

IV. CONCLUSION

Use of medicine by tribal people has great potential for discovery of new and undiscovered medicines for cure of human diseases and human welfare. [20]

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