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Ethnomedicinal climbers found in Jharkhand and their uses among the local tribes: A review

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Abstract

Traditional practices of medicines are slowly fading away due to modernization in science and technology. Modern synthetic drugs are replacing natural herbal medicines. People belonging to tribal communities still practice their traditional medicine and are known to be into traditional medicine practices from ages. They use various formulations for the preparation of medicines with different parts of plant like roots, leaves, bark, fruits, seeds and stems or extracted compounds or whole plant to cure small injuries to various chronic diseases with negligible side effects. This review presents the uses of total 40 ethnomedicinal climbers used in treatment of various ailments including their family name, parts used and local name of species as well.

Keywords: Climbers, ethnomedicinal, Jharkhand, tribes

Introduction

Climbers are known to be aesthetic of gardens and are one of the important sections of plant communities; still they are the least explored communities of plants in terms of medicinal and nutritional values. They require means of artificial and natural support to spread and to grow because of their weak stems. They add 5% and 2- 15% of wood and leaf biomass to the forest biomass^[1]. They are often found in houses, parks as ornamental plants used for the decoration purposes because of their attractive patterns of leaves, clinging stems and beautiful visuals. Now a days climber are mostly found to be used as an aesthetic by large portion of population but many tribal communities use it to cure sickness, infections and other various disorders and diseases. According to Botanical survey of India, Out of 18000 species of angiosperms, 8000 species are of medicinal use which consist several climbers. Studies have revealed that climbers were used for medicinal purposes back in ancient days. Their healing properties have also been mentioned in ancient Ayurveda, Unani and Siddha medicine which also show the importance of climbers in our Indian culture^[2].

Jharkhand is known to have large tribal populations and dense forest as well. There are about 32 tribe communities found in Jharkhand in which Santhal is the largest tribe followed by Oraon, Munda and Ho. These tribal people are highly dependent on forest resources for their food, shelter, household, livelihood and for almost everything. They frequently use wild edible plants which are mostly unknown to us in their day to day life without disturbing populations. Even in medicines they prefer their own traditional way of treatment over modern medicines which make them highly knowledgeable about good and bad elements of plants, in which climbers are one of them. Due to their extensive medicinal knowledge about wild plants many tribal communities practices medicines. They have their own traditional ways like formulations and methods of preparing medicines which were passed onto them by their ancestors. Climber parts as per requirement are collected from forest, farm field and other areas of natural vegetation and then they use it traditionally for the treatment of various ailments. It was also revealed by various studies that climber contains various biological and pharmacological activities and is also high in bio- active compounds which make them good herbal supplements of synthetic medicines^[3] and it was also found that they are more evolved and ecological than other non- climbing relatives (Gianoli, 2014)^[4].

The medicinal and nutritional values of various climbers are still unknown because of lack of their documentation and intensive studies. Kumar *et al.* (2013) studied and documented forest climbers in some districts of Jharkhand i.e. Chatra, Ranchi, Hazaribagh, Latehar and East Singhbhum in relation to various disturbing anthropogenic activities in forests. In studied area 36 dicotyledonous species and 9 monocotyledonous species were found and fabaceae emerged as dominant family followed by Cucurbitaceae, Dioscoraceae and Liliaceae whereas hook and tendril climbers were close to negligible^[5]. This shows increasing population leads to overexploitation and fragmentation of forest areas causing gradual decline of plants including climbers.

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This directly or indirectly affects the tribals whose livelihood is fully dependent on medicine practices. So, these traditional

cultures, practices, methods, experience and knowledge needs to be recognized and needs to be preserved [6].

Table 1: Ethnomedicinal climbers found in Jharkhand and their uses among the local tribes

Sl. No	Botanical Name	Family	Local Name	Parts Used	Uses
1.	<i>Abrus precatorius</i>	Fabaceae	Karjani	Seed, Root	Leaves paste is used in cough, cold, skin disease and for treating shoulder swellings. Root paste and powder is used for the treatment of eye infections, diabetes, diarrhoea, jaundice, headache, menstrual problems, leucorrhoea, abdominal pain and in sexual disorders. Plant is also used to cure asthma, and also used as vasoconstrictor and anti- pregnancy agent whereas seeds are used to cure central nervous system disorders and used as antibacterial agent [7-14].
2.	<i>Asparagus racemosus</i>	Asparagaceae	Satawar	Root, Tuber	Used in treatment of sexual disorders, arthritis, stomach problems, fever, anaemia, leucorrhoea and for increasing immunity. Root as paste and decoction used in treatment of dysentery and urinary diseases whereas decoction of tuber is used in treatment of lactation, diabetes and menstrual problems [15-22].
3.	<i>Barleria prionitis</i>	Acanthaceae	Bergeria kanda	Tuber, Root, Leaves	Leaves are used to treat stomach disorders, fever, toothache, urinary disorders and to get rid of pimples. Root decoction is used as mouthwash and in swellings [23].
4.	<i>Basella alba</i>	Basellaceae	Poi Sag	Leaves	Leaves are used in treatment of skin rashes, wound, urinary disorders, and anaemia. It also acts as laxative, analgesic, anti-inflammatory and anti-fungal agent [24, 25, 26].
5.	<i>Bauhinia vahlii</i>	Fabaceae	Gungu	Leaf, Bark, Root	Root is used in treatment of snake bite [27].
6.	<i>Bryonopsis laciniosa</i>	Cucurbitaceae	Toktoyan Sag	Tender leaves, Seed	Seeds are used in menstrual problems, snake bite and fever [28, 29].
7.	<i>Butea superba</i>	Fabaceae	Lata Palash	Root	It is used against sexual disorders, leucorrhoea, arthritis, filariasis due to its antibacterial and antifungal activities [30].
8.	<i>Centella asiatica</i>	Apiaceae	Brahmi	Aerial part, Seed	Seed oil is used in diarrhoea, jaundice. Leaves are used to get rid of weakness, eye problems, stomach problems and in post pregnancy problems. Decoction is taken to cure leprosy and tuberculosis whereas, whole plants is used against various pains of body, jaundice [37-45].
9.	<i>Cissampelos pareira</i>	Menispermaceae	Patha	Whole Plant	Roots are used in fever, snake bite, stomach problems, jaundice, respiratory disorders, malaria, heart diseases, epilepsy and neurological disorders [46- 48].
10.	<i>Cissus quadrangularis</i>	Vitaceae	Hadjod	Bark, stem	Bark is used in treatment of asthma, wound and bone related problems like fractures, osteoarthritis [49-51].
11.	<i>Clitoria ternatea</i>	Fabaceae	Aprajita	Flower, fruit	Leaves are used in treatment of eye problems, skin disorders, ulcer asthma and tuberculosis [52].
12.	<i>Coccinia grandis</i>	Cucurbitaceae	Kundri	Whole Plant	Fruits and leaves are used to cure anaemia.
13.	<i>Coccinia indica</i>	Cucurbitaceae	Kunduru	Leaves, roots,	Roots are used in treatment of leucorrhoea, skin diseases, and respiratory disorders. It is used during the labour pain and delivery of child [53].
14.	<i>Cocculus hirsutus</i>	Menispermaceae	Chilhinth	Leaves, Root	Root syrup is used to cure sun burn, snake bite. Leaves syrup is used to treat eye disorders, fever, skin diseases and sexual disorders [54].
15.	<i>Cuscuta reflexa</i>	Convolvulaceae	Amarbel	Whole plant	It is used in treatment of skin diseases, diarrhoea, hair related problems, respiratory disorders, cough, liver disorders and possesses anti- cancerous and anti- inflammatory properties [55-57].
16.	<i>Cyphostemma auriculatum</i>	Vitaceae	Amad simad	Bark	Bark is used in in treatment of snake bite [58].
17.	<i>Dioscorea alata</i>	Dioscoreaceae	Aru kanda	Root	Roots are used as wormicide. It is used to cure anaemia, heat stroke, sexual disorders, jaundice and fever [59].

18.	<i>Dioscorea bulbifera</i>	Dioscoreaceae	Karukand	Leaves, Tuber, Root, seeds	It is used in ulcer treatment, wound healing, throat pain, swellings, cardiac disorders, conjunctivitis and dysentery. Seed decoction is used in treatment of jaundice, piles and abdominal related problems. Leaf paste is used in skin infection. Tuber powder is used in treatment of diarrhoea. Root paste is used in treatment of cough and respiratory disorders.
19.	<i>Dioscorea daemona</i>	Dioscoreaceae	Kulu kanda	Stem	Used in treatment of wound, ulcer.
20.	<i>Dioscorea pentaphylla</i>	Dioscoreaceae	Nakwa kanda	Tuber	Tubers are used to increase immunity, used in against abdominal pain, swellings and body weakness ^[60] .
21.	<i>Gloriosa superba</i>	Colchicaceae	Kalihari/ Kankasani/ Jagrahi/Sundarpahari	Tuber	Leaves are used in treatment of gout, skin infection, dysentery, diarrhoea, childbirth and to prevent pregnancy. Root is used in abortion, fever, wounds. Leaves are used in treatment of respiratory disorders and tumours ^[61-63] .
22.	<i>Gymnema sylvestre</i>	Apocynaceae	Gudnar	Leaves, Bark	Used in malaria and snake bites. Leaves are used in diabetes ^[64, 65] .
23.	<i>Hemidesmus indicus</i>	Asclepiadaceae	Anantamul/Anant bel	Root, Leaves	Root is used in fever, vomiting, skin disorders, polio. It is used in treatment of cold, dysentery, gynaecological disorders, cough, jaundice, weakness and abdominal disorders. It is used as blood purifier and anticancerous agent and helps in mammary lactation ^[66- 68] .
24.	<i>Lygodium flexuosum</i>	Lygodiaceae	Bhutraj	Leaves	Used in digestive disorders, dog bites, fever, swelling, wound, jaundice, cough, liver diseases, ulcer, skin disorders. Plant has antibacterial effects ^[69] .
25.	<i>Melilotus indicus</i>	Fabaceae	Banmethi	Leaves, seed	It is used in sexual disorders.
26.	<i>Melothria heterophylla</i>	Cucurbitaceae	Ban kundari	Leaves	It is used in treatment of sexual disorders and act as antifertility agent.
27.	<i>Momordica dioica</i>	Cucurbitaceae	Kheksa	Stem	Used in fever, abdomen disorders, mental disorders, elephantiasis, leprosy, respiratory problems ^[70, 71] .
28.	<i>Mucuna pruriens</i>	Fabaceae	Alkusi	Leaves, Root	Root is used in leprosy, fever. It is used in sexual disorders, neural disorders, stomach disorders, menstrual disorders, ulcers, tuberculosis.
29.	<i>Paederia foetida</i>	Rubiaceae	Gandhi genhari	Bark, Fruit, Root	It is used against malaria, piles, polio ^[72-74] .
30.	<i>Pergularia daemia</i>	Apocynaceae	Mausi sag	Leaves, Bark.	Used in menstrual disorders, urinary disorders and respiratory disorders ^[75] .
31.	<i>Rivea hypocrateriformis</i>	Convolvulaceae	Phanji	Leaves, Tubers	It is used in snake bites.
32.	<i>Smilax macrophylla</i>	Smilacaceae	Ramdatun	Root	It is uses against sexual disorders, Root is used against urinary infections.
33.	<i>Smilax zeylanica</i>	Smilacaceae	Raipan	Root, Leaves	Leaves are used in skin disorders and dysentery. Root decoction is used in piles.
34.	<i>Solena amplexicaulis</i>	Cucurbitaceae	Van Kakri	Leaves	It possesses antibacterial activity.
35.	<i>Teramnus labialis</i>	Fabaceae	Vanurad	Seed	Seeds are used in neural disorders, diabetes, ulcer, cancer.
36.	<i>Tinospora cordifolia</i>	Menispermaceae	Giloy	Whole Plant	It is used in treatment of various skin disorders, gout, liver disorder, urinary disorder, elephantiasis, arthritis. Stems latex are used in malaria, root powders are used in sexual disorders. It also possesses anticancerous activity.
37.	<i>Ventilago denticulata</i>	Rhamnaceae	Keoti	Bark, Root Flower	Root is used against ear infection, headache ^[76] .
38.	<i>Vitis repanda</i>	Vitaceae	Pani Bel	Fruits, Leaves	Used in treatment of sexual disorders, piles and in joint pains.

Discussion and Conclusion

The above mentioned review speaks a lot about potential of climbers as therapeutic medicine. It was observed that every part of climbers like roots, flowers, roots, leaves, seeds and bark can be used for medicinal purposes. It was also observed that climbers of Cucurbitaceae and Fabaceae family found to be dominant followed by others. Detailed investigation should be done regarding safety and efficacy of these traditional

treatments of climbers for their future utilization as therapeutics. Hence, much needed study and documentation is required on climbers. This will not only help in production of cost effective drug development and treatment but will also be useful for conservation of climbing plants which are in the verge of extinct due to lack of knowledge.

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