



Research Article

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ETHNOMEDICINAL HERITAGE OF GANDHAMARDAN HILLS, BALANGIR, ODISHA, INDIA: A STUDY ON INDIGENOUS HERBAL KNOWLEDGE

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ABSTRACT

Background and Aim: Traditional medicine and ethno-plants play a vital role in tribal communities, and medicinal plants have been used since ancient times. The Gandhamardan hill range of the Balangir district of Odisha, a recently declared Biodiversity Heritage Site, harbours rich floristic diversity and is inhabited by tribes possessing valuable indigenous herbal knowledge. The present study aimed to document the most well-known ethnomedicinal plants traditionally used by the ethnic community of this hill region, together with their local names, botanical names, families, parts used, and modes of administration. Materials and Methods: A field-based ethnomedicinal survey was carried out through several field trips, surveys and interviews with indigenous tribes and traditional healers of the Gandhamardan hill. Plant specimens were collected, identified and authenticated with the help of standard floras, and information on their therapeutic uses and methods of administration was recorded and analysed qualitatively. Results: Fifteen plant species belonging to different families were documented. For each species, the local name, Ayurvedic name, botanical name, family, part(s) used and ethnomedicinal indications were recorded. The species are traditionally used to manage a wide range of conditions, including digestive, respiratory, dermatological, gynaecological, urinary, metabolic and neurological disorders. Discussion: The findings reflect the deep-rooted relationship between local biodiversity and traditional healthcare and reveal a rich, orally transmitted body of herbal knowledge that is currently under threat. Conclusion: The study emphasises the unique plant wealth of this hill range and the urgent need to conserve threatened species and to scientifically validate these traditional remedies.

Keywords: Gandhamardan hill, Ethno-medicine, Ayurveda, Tribal community, Medicinal plants.

INTRODUCTION

Ethnomedicine is more cultural and preferable. The study of the direct interactions between people and plants is known as ethno-botany. The word “ethno-botany” was first used in 1895 by the botanist John William Harshberger to refer to the study of the way indigenous people use plants.¹ The medicinal and nutritional value of these plants is derived from a variety of phytochemicals with important pharmacological properties. The main sources of phytochemicals used in herbal, pharmacological and nutraceutical formulations are secondary metabolites, which are created by plants biosynthetically from primary metabolites.² India has a long history of herbal medicine, and it is widely accepted that Indians were familiar with a much greater number of medicinal plants than the residents of any other country on the planet.³

This research article presents information on the ethnomedicinal plants of Gandhamardan Hill, located in western Odisha in the Balangir and Bargarh districts. The hill range falls under the Eastern Ghats biogeographic zone and lies between 20°42'N to 21°00'N latitude and 82°41'E to 83°05'E longitude. The altitude varies between 320 and 1220 m.⁴ In this hill region, the rainfall and moderate weather support tropical deciduous forest with a good number of ethnomedicinal plant species. Normally, in the summer season (March–June) the maximum temperature goes up

to 37 °C–46 °C, whereas in the winter season (December–January/February) the minimum falls to around 6 °C to 12 °C.

The hill range is renowned for its rich floristic diversity, especially for medicinal plants and reptiles.⁵ Considering the significance of the site, the Government of Odisha has recently declared the Gandhamardan hill as a Biodiversity Heritage Site.⁶ After Mandasaru (Kandhamal) and Mahendragiri (Gajapati), it is the third Biodiversity Heritage Site in the state of Odisha and the 37th in India. Its rich floral and faunal diversity and medicinal plants have a variety of biological, ecological and socioeconomic implications for the people of Odisha.⁷ Nrusinghanath and Harishankar, two ancient temples at the base of the hills on the northern and southern slopes respectively, have significant traditional value and act as sacred groves for the preservation of biodiversity. A comprehensive vegetation survey of the Gandhamardan slopes was carried out by the Botanical Survey of India (BSI), which recorded 2700 angiosperms, 125 medicinal plants and 220 species of therapeutic, quasi-medicinal and commercially viable plants. Ferns and lichens grow abundantly along the stream banks. Since there are no habitable valleys in the forest, there is no human habitation within it. Nuapara, Khaprakhol, Jharbandh, Gaisilet, Paikmal, Padampur and Patnagarh blocks comprise the villages and urban areas that surround the hills.

Earlier workers have observed that the Kandha tribes of Balangir district have adopted indigenous herbal therapy and treatment practices for Chronic Suppurative Otitis Media (CSOM) using plant resources available on the Gandhamardan hill. The herbal medicine is prepared using three plant species, i.e. *Ruellia tuberosa* L., *Ocimum sanctum* L. and *Sesamum orientale* L. This reflects the rich traditional knowledge of the people inhabiting in and around the Gandhamardan hill range.⁸

MATERIALS AND METHODS

Study Area

This research study was conducted in the Gandhamardan hill of the Balangir district, Odisha (Figure 1). The team (author, guide, taxonomist, indigenous tribes and traditional healers) visited the Gandhamardan hill several times, using a number of standard medicinal-plant floras such as Indian Medicinal Plants by Kirtikar and Basu,⁹ The Wealth of India,¹⁰ and The Flora of Orissa by H.O. Saxena and M. Brahmam.¹¹ Various ethnomedicinal plants were identified and examined, many of which are used to treat common health problems by the local healers. The information collected was cross-checked among multiple informants and analysed

qualitatively.

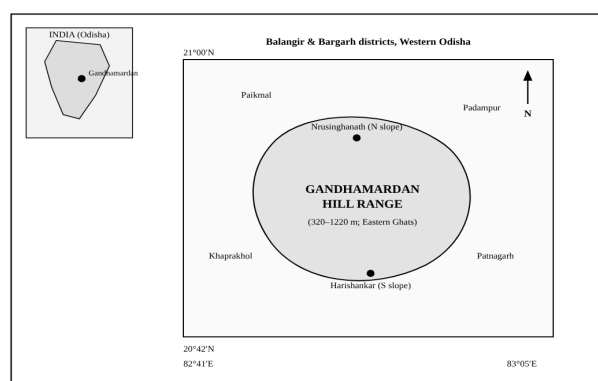


Figure 1: Schematic location map of the Gandhamardan Hills, Balangir–Bargarh districts, Western Odisha, India (20°42'–21°00'N latitude, 82°41'–83°05'E longitude; altitude 320–1220 m). Not to scale.

Table 1: Ethnomedicinal plants of Gandhamardan hill (Odisha)

Local Name	Ayurvedic Name	Scientific Name and Family	Parts Used	Ethnomedicinal Use
Bela	Bilwa	<i>Aegle marmelos</i> (L.); Rutaceae	Fruit, leaves, root	Agnimandya (dyspepsia), Amatisara (mucoid diarrhoea), Badhira (deafness), constipation, oedema, haemorrhoids, anaemia
Jamun	Jambu	<i>Syzygium cumini</i> (L.); Myrtaceae	Fruit, leaves, seed	Madhumeha (diabetes), Raktapradara (menorrhagia), Atisara (diarrhoea), Mukha roga (oral diseases), Mutrakrichhra/Ashmari (dysuria/urinary calculi)
Kaincha	Gunja	<i>Abrus precatorius</i> (L.); Fabaceae	Root	Throat and mouth infections, Dhabalakushta (leucoderma), Gridhrasi (sciatica), Indralupta (alopecia)
Akanabindh	Patha	<i>Cissampelos pareira</i> (L.); Menispermaceae	Leaves, root	Hadabhanga (fracture), Madhumeha (diabetes), Atisara/Amatisara (diarrhoea), Vidradhi (abscess)
Gila	Kantakikaranja	<i>Caesalpinia crista</i> (L.); Fabaceae	Seed	Vishamjwara (intermittent fever), stomach ache, testicular swelling, otorrhoea, Mukha vrana (pimples)
Phana-phana	Shyonaka	<i>Oroxylum indicum</i> (L.); Bignoniaceae	Root bark	Earache, Atisara (diarrhoea), Amavata (rheumatoid arthritis), Pihula/Balapsmara (infantile epilepsy), chicken pox
Baidanka	Kapikachhu	<i>Mucuna pruriens</i> (L.); Fabaceae	Seed	Impotency, Swetapradara (leucorrhoea), scorpion bite, roundworm infection, Sotha (oedema), Godara (elephantiasis), paralysis, Kampa vata (Parkinson's disease), vaginal contraction
Mahula	Madhooka	<i>Madhuca longifolia</i> (Koen.); Sapotaceae	Flower	Kama shakti (vigour/libido), body ache, enlargement of testicles, neurological weakness
Chatiana	Saptaparna	<i>Alstonia scholaris</i> (L.); Apocynaceae	Bark	Fever, diarrhoea/dysentery, Amavata, Sutika roga (puerperal disorders), Vicharchika (eczema), Swasa (dyspnoea), leprosy, earache and toothache, infected wound, oedema, UTI
Harida	Haritaki	<i>Terminalia chebula</i> (Retz.); Combretaceae	Fruit	Amavata, gas/constipation, Vatarakta (gout), Chhardi (vomiting), Atisara, Ashmari, eye diseases, Arsha (haemorrhoids), Kananakha (paronychia), cough, mouth sores
Patali/Patala	Patala	<i>Stereospermum suaveolens</i> (Roxb.) DC; Bignoniaceae	Root bark	Wounds, headache, Unmada (insanity), Hikka/Swasa (hiccough/dyspnoea), Amlapitta (hyperacidity), burns, postpartum weakness
Varuna	Varuna	<i>Crataeva nurvala</i> Buch.-Ham; Capparaceae	Leaves, bark	Amavata, Ashmari, Gandamala (cervical lymphadenitis), Vidradhi, Medaroga (obesity)
Khaira	Khadira	<i>Acacia catechu</i> (L.f) Willd.; Fabaceae	Heartwood, resin	Leprosy, piles/wound healing, Raktapitta (bleeding disorders), Sweta/Rakta pradara, Swarabhanga (hoarseness), mouth sores, cough, Prameha, ear infection, Atisara/Amatisara
Agibathu	Agnimantha	<i>Premna mucronata</i> (Roxb.); Verbenaceae	Root	Sheetapitta (urticaria), Amavata, Arsha, enlargement of testicles, Meda vridhi (obesity)
Arjuna	Arjuna	<i>Terminalia arjuna</i> (Roxb.); Combretaceae	Bark	Cardiovascular disease, fracture, Raktapitta, Bhasmagni (polyphagia), mouth ulcers, earache, wound, Shukrameha (spermatorrhoea)

Ethnomedicinal Plants using by Local Vaidya's



Bilwa
(*Aegle marmelos* (L.) Rutaceae)



Jambu
(*Syzygium cumini* (L.) Myrtaceae)



Gunja
(*Abrus precatorius* (L.) Fabaceae)



Patha
(*Cissampelos pareira* (L.) Menispermaceae)



Kantaki karanja
(*Caesalpinia crista* (L.) Fabaceae)



Shyonaka
(*Oroxylum indicum* (L.))



Kapikachhu
(*Mucuna pruriens* (L.) Fabaceae)



Madhooka
(*Madhuca longifolia* (Koen.) Sapotaceae)



Saptaparna
(*Alstonia scholaris* (L.) Apocyanaceae)



Haritaki
(*Terminalia chebula* (Retz.) Combretaceae)



Patala
(*Stereospermum suaveolens* (Roxb.) DC Bignoniaceae)



Varuna
(*Crataeva nurvala* Buch. -Ham Cappariaceae)



Khadira
(*Acacia catechu* (L.f) Willd. Fabaceae)



Agnimantha
(*Premna mucronata* (Roxb.) Verbenaceae)



Arjuna
(*Terminalia arjuna* (Roxb.) Combretaceae)

RESULTS AND DISCUSSION

The Gandhamardan hill range is home to a wide variety of medicinal plants. The great biodiversity of the Gandhamardan hills has been preserved in large part by the local people. The traditional healthcare systems of many tribes and practitioners in the area employ around 500 distinct species of medicinal plants.¹² This manuscript highlights fifteen such ethnomedicinal plants which are required for everyday medical needs.¹³ The Ayurvedic indications recorded for these plants are largely in agreement with the classical Ayurvedic literature.¹⁴

The detailed local methods of preparation and administration recorded for each of the fifteen species are described below. For the benefit of non-Ayurveda readers, the English equivalents of the Sanskrit/Ayurvedic terms are given in parentheses at first mention.

Bela [*Aegle marmelos* (L.)]

Indigestion/Agnimandya (dyspepsia): Chewing 7 bilwa leaves along with 2 black-pepper seeds every morning on an empty stomach helps to get rid of indigestion and Agnimandya; also, consuming 2 teaspoons of bilwa leaf powder regularly is beneficial in diabetes.

Amatisara (mucoid diarrhoea): Unripened bilwa pulp is cut into pieces and dried. Consuming 1 teaspoon of dry bilwa powder twice a day on an empty stomach regularly for a few days will relieve Amatisara, Grahani (malabsorption syndrome) and Sangrahani disorders.

Constipation: Constipation is relieved by eating ripe bilwa.

Edema (oedema): 2 teaspoons of bilwa leaf juice mixed with a little black-pepper powder and consumed twice a day on an empty stomach regularly for a few days will cure swelling of the hands and feet due to oedema.

Bleeding piles: 1 teaspoon of dried bilwa pulp powder with 1 cup of buttermilk twice a day taken regularly is beneficial in bleeding haemorrhoids.

Anemia (anaemia): Taking 2 spoons of bilwa pulp powder with 1 glass of milk regularly in the morning increases blood and strengthens the body.

Badhirya (deafness/hearing loss): Regular application of Bilwadi Taila (a medicated oil) in the ear cures hearing loss, ringing in the ear, etc.

Jamun [*Syzygium cumini* (L.)]

Madhumeha/Diabetes: 1 teaspoonful of powdered jamun leaves or half a teaspoonful of seed powder twice a day, fifteen minutes before meals, can control the blood sugar. Consuming ripe jamun fruit is beneficial in diabetes.

Rakta Pradara/Menorrhagia: Consuming 10 ml of the juice of tender leaves or bark of the jamun tree with rice water twice a day on an empty stomach cures Rakta Pradara (menorrhagia).

Atisara/Diarrhoea: Taking half a teaspoon of jamun seed powder or 1 teaspoon of powdered leaves can relieve Atisara (diarrhoea). In small children, the juice of the young leaves of the jamun tree is taken with half a spoonful of honey.

Mukha Roga/Mouth diseases: All mouth diseases and weakness of the teeth are cured by washing with jamun tree bark decoction.

Mutrakrichhra/Ashmari (dysuria/urinary calculi): Consuming ripe jamun fruit juice with Saindhava Lavana (rock salt) cures burning micturition due to urine retention.

Kaincha [*Abrus precatorius* (L.)]

Throat and mouth infections: Application of 5 g of kaincha leaves with 5 g of kababchini (*Piper cubeba*) juice helps to cure throat infections and mouth sores; applied 3 times a day for at least 4 days to get a permanent result.

Dhabalakushta (leucoderma): Applying the root paste of white

kaincha and Rakta Chitraka (red *Plumbago*) on the affected area cures Dhabalakushta within 2 months.

Gridhrasi/Sciatica: Kaincha leaf paste is slightly warmed and coated on the painful leg; it relieves the pain temporarily. The same application is also used in paralysis of the hands.

Indralupta (alopecia/baldness): If there is fungal infection and baldness, the head is rubbed for some time with any kind of material, then kaincha leaf or root paste is applied; after 7 days of regular application new hair will grow.

Hair oil: Applying oil made from kaincha seeds and Bhringraja (*Eclipta alba*) juice on the scalp regularly cures dandruff and various bacterial and fungal infections.

Akanabindhya [*Cissampelos pareira* (L.)]

Hadabhanga (fracture): 10 g of raw akanabindhya leaves mixed with 10 g of turmeric and taken twice a day on an empty stomach for 1 month will heal broken bones.

Scorpion sting: Apply raw akanabindhya leaf paste to the site of the scorpion sting to relieve the burning pain immediately.

Madhumeha (diabetes): 1 teaspoon of akanabindhya root powder twice a day on an empty stomach regularly for 3–4 months is very beneficial in type-2 diabetes. It does not suddenly control the blood sugar but improves the overall condition of the patient as it improves digestion. A diabetic patient who is in a state of indigestion is given a decoction of akanabindhya root, and the condition changes in a very short time.

Atisara/Amatisara (diarrhoea/mucoid diarrhoea): Four or five applications of akanabindhya root with pippali (long pepper), sunthi (dry ginger) and rice water will cure Ajirna (indigestion) and Amatisara.

Vidradhi (abscess): Akanabindhya root 10 g mixed with rice water and taken twice a day on an empty stomach regularly for 3 months will cure gonorrhoea and syphilitic ulcer.

Gila [*Caesalpinia crista* (L.)]

Vishamjwara (intermittent/malarial fever): The gila seed is fried in a pan for some time and the pulp inside is removed. 100 g of this pulp powder mixed with 50 g of pippali (long pepper) powder, pounded in honey, made into pills the size of peas and kept dry. Taking 2 tablets twice a day cures all types of common fever in three days. Black pepper is used instead of pippali when making pills for malaria.

Stomach ache: If one of the gila seed pulps is put in a chillum and smoked, the stomach ache caused by vata (air) disorder is relieved immediately. Consuming 1 teaspoon of the juice of the gila root bark with black-pepper seeds also relieves flatulence and stomach ache.

Swollen testicles/swelling: Crushed gila seeds warmed with castor oil and applied to the swollen testicles bring relief in about 7 days.

Otorrhea/Otorrhoea (ear discharge): Finely powdered gila seed cures otorrhea in 3–4 applications.

Mukha vrana/Pimples: Applying gila seed pulp with water gets rid of pimples in youth. By extracting the oil of the gila seed and applying it on the face regularly, wrinkles are removed and the skin becomes soft and bright.

Phana-phana [*Oroxylum indicum* (L.)]

Kanapacha/Earache: Oil is prepared from the raw bark of the phana-phana tree, and applying this oil in the ear regularly for a few days will cure the earache.

Atisara (diarrhoea): A decoction is prepared from 200 g of the root bark of the phana-phana tree; after cooling, add 1 teaspoon of honey and consume. It will cure Atisara within 2–3 days.

Amavata (rheumatoid arthritis): Bathing regularly with phana-phana bark decoction for a few days, and consuming 1 teaspoon of powdered phana-phana bark 3 times a day, cures the body pain of an Amavata patient. It is also very beneficial in gouty arthritis.

Pihula/Balapsmara (infantile epilepsy/convulsions): Bathing in water made from the bark of the phana-phana tree regularly for a few days cures infantile epilepsy (Balapsmara).

Hadaphooti/Chicken pox: 10 g of phana-phana bark paste mixed with 1 cup of water is taken by a chicken-pox patient, and some bark paste is applied externally on the whole body; the fever, burning and sores will disappear within 6 hours. If applied in the early stages, the disease subsides quickly. This medicine is applied only once.

Baidanka [*Mucuna pruriens* (L.)]

Lack of sexual potency: Half a kilogram of baidanka seeds are boiled in 4 litres of cow's milk; when the milk becomes thick, the seeds are removed and the husk is removed. The seeds are fried in cow ghee until they turn red and made into 10 g ladoos dipped in honey. Consuming this mixture every morning and evening on an empty stomach regularly for 2 months results in a strong increase in work power, increases the amount of sperm and strengthens the body.

Swetapradara (leucorrhoea): Clean the baidanka seeds with cow milk, remove the outer shell, dry it and mix it with an equal amount of rock sugar; consuming 1 teaspoon twice a day for 3 months regularly on an empty stomach is very useful in the treatment of Swetapradara (leucorrhoea).

Scorpion bite: Applying baidanka seed paste on the affected area cures the burning pain very quickly.

Roundworm infection: A roundworm infection causes small white patches on the cheeks. The child has frequent colds, is very thirsty, has stomach ache and is prone to cold or frequent itching, and grinds the teeth while sleeping at night. In such a case, one fruit of baidanka (with hair) is put in 100 ml of honey or jaggery and, after mixing well, the hair on top of the fruit is scraped off with a knife and mixed well in honey or jaggery. Adults take 1 teaspoon of this mixture and children half a teaspoon once in the morning on an empty stomach regularly for 4 days. On the fourth day at night, add 2 teaspoons of castor oil to 1 cup of milk and drink it. All roundworms will come out with the stool.

Sotha (swelling/oedema): For swelling due to any reason, take 2 pieces of baidanka fruit (with hair) boiled with 2 glasses of water; reduce to half a glass and drink it in the morning and in the evening. It cures within 8 to 10 days.

Godara (elephantiasis/filariasis): Baidanka root paste mixed with castor oil and applied regularly on the affected parts for a few days is very beneficial.

Paralysis: 20 g of dried baidanka root boiled with 2 glasses of water and taken as half a glassful is used for paralysis. This application should be done twice a day, in the morning and in the evening, for at least 1 month.

Infected wound: Its raw leaf paste applied to an infected wound dries it up very quickly.

Kampa Vata/Avabahuka (Parkinson's disease/frozen shoulder): Making a decoction of its root and consuming it with honey regularly for 3 months is very beneficial in Parkinson's disease and cervical spondylosis.

Contraction of the vagina: A decoction is made of its root, a clean white cloth is moistened and held inside the vagina, and the vagina is washed with that water; the relaxed vagina will contract. This application has to be done for at least 1 month.

Mahula [*Madhuca longifolia* (Koen.)]

Kama Shakti (vigour/libido): Taking 20 g of mahua flower paste in 1 glass of warm milk regularly for a few days increases the vigour.

Body aches: Dried mahua flowers are fried in a heavy pot like lia (fried paddy) and consumed regularly; body aches caused by overexertion are cured soon.

Enlargement of testicles: Applying mahua leaves as a warm paste reduces the initial stage of enlarged testicles within a few

days.

Nervous weakness: Regularly massaging mahua seed oil on the body for a few days relieves muscle pain and nervous weakness.

Chatiana [*Alstonia scholaris* (L.)]

Common and malaria fever: 25 g of chatiana bark boiled with 1 glass of water and taken as a half cup relieves fever in 2–3 days. It should be taken twice a day on an empty stomach. If this application is continued for 4–5 days, malarial fever is also cured and post-fever weakness and malaise are removed.

Diarrhoea/Dysentery: 1 teaspoon of powdered chatiana seeds mixed with 1 cup of curd and consumed 3 times a day is beneficial in general diarrhoea/dysentery.

Amavata (rheumatoid arthritis): Applying the latex of the chatiana tree regularly on the affected joints for a few days relieves the pain.

Sutika Roga (puerperal disorders): After childbirth, 1 spoonful of dry bark powder given with one cup of cow's milk twice a day increases milk production, purifies the breast milk, and there is no possibility of Sutika Jwara (puerperal fever).

Leprosy: 1 spoonful of chatiana bark powder taken twice a day regularly for 6 months, with the latex of chatiana applied on the affected skin, cures leprosy.

Vicharchika (eczema): If Vicharchika or eczema is covered with dry, thick skin, chatiana bark latex is applied regularly for a few days. As a result, the pus comes out and the infected area becomes moist; then applying appropriate medicine cures it very quickly.

Swasa (dyspnoea/asthma): Adding 1 teaspoon of honey and 5 g of pippali (long pepper) powder to the juice of chatiana bark and consuming it twice a day for 1 month greatly improves the condition of respiratory patients.

Earache and toothache: Chatiana latex mixed with an equal amount of sesame (til) oil and put in the ear relieves earache. Applying chatiana latex is also beneficial in toothache.

Infected wound: Crushed tender leaves of the chatiana tree, or its latex, applied on an infected wound, dries it up in a few days.

Edema (oedema): In watery oedema of the body and swelling of various parts, 1 teaspoon of chatiana bark powder is given in 1 cup of milk twice a day, and the bark paste with water is applied to the oedematous organs. About 1 week of regular application cures the condition.

Urinary tract infections: Consuming 1 teaspoon of chatiana bark twice a day for 1 week is beneficial when the lower abdomen is burning and there is pus in the urine. Mixing sandalwood with chatiana bark gives more benefit.

Harida [*Terminalia chebula* (Retz.)]

Amavata (arthritis): One and a half teaspoons of crushed harida roasted in castor oil, taken twice a day on an empty stomach with warm water, improves the condition of the patient by aiding digestion and drainage of the body tissues. Regular use for about six months gives permanent results.

Gas/stomach cramps/constipation: For frequent gas and constipation with foul-smelling stools, powder harida (without seed), and consume 1 teaspoon with jaggery three times a day after meals.

Vatarakta (gout): In Vatarakta, if 10 g of harida is boiled in 2 glasses of water, strained, and 2 spoons of jaggery added, and used twice a day on an empty stomach regularly for about a month, it is beneficial.

Chhardi (vomiting): Two spoonfuls of harida powder with the same quantity of honey will cure Chhardi.

Atisara (diarrhoea): Grinding young harida and adding half a spoonful to one cup of curd and consuming it two to three times a day is good for Atisara.

Ashmari (urinary calculi): In kidney or bladder stones, grind the pulp of the harida and take 1 teaspoon in 1 glass of milk twice a day. With regular use for about fifteen days, the stones turn to

powder and pass in the urine.

Eye diseases (conjunctivitis): Harida powder fried in cow's ghee is applied over closed eyes with a bandage; the eyes are cured within two or three days. It is convenient to apply this while sleeping at night.

Arsha (haemorrhoids/piles): Arsha patients get rid of the disease in two to three months if they consume 1 spoon of harida powder mixed with jaggery every morning and evening.

Kananakha (paronychia/nail infection): In this disease, the nails of the fingers become infected and ulcerated. Cut a round hole in a ripe lemon, put the diseased finger in it and keep it for 10 minutes. Then harida is ground like sandalwood, coated on the nail and tied. Applied regularly for eight to ten days, the disease is completely cured.

Cough: Harida slightly burnt in fire and chewed reduces cough. If the cause of the cough is in the throat, it can be cured in many cases; but if the cough sounds deep, the infection has already reached the lungs, and this application is not very beneficial.

Mouth sores: In case of sores on the tongue or inside the mouth, or swelling of the gums, gargling with a decoction of harida is very beneficial.

Patali/Patala [*Stereospermum suaveolens* (Roxb.) DC]

Cuts/wounds: In cuts and bleeding wounds, crushing the leaves of the plant stops the bleeding and the wound dries up permanently.

Unmada (insanity/psychosis): Patali leaves are mixed with water, and the juice is squeezed into a bowl. If this juice is mixed with 1 teaspoon of lemon juice in 2 teaspoons and consumed twice a day, it is beneficial in Kaphaja Unmada (in which the patient stays silent, does not respond to calls, talks to himself and worships excessively). It is consumed for 1 month.

Headache: In cranial headache, patali seeds are applied to the forehead like sandalwood. Headache is relieved in about 1 week.

Hikka/Swasa (hiccough/dyspnoea): 1 spoonful of crushed patali flowers with 1 spoonful of honey taken twice a day on an empty stomach regularly for a few days cures Hikka and is also beneficial in respiratory diseases.

Amlapitta (hyperacidity): 20 g of patali bark is boiled in 2 glasses of water, and drinking the decoction cures hyperacidity in about 1 month. It is taken twice a day on an empty stomach.

Burns: 1 kg of the bark of the root of the patali tree is boiled in 8 litres of water down to 2 litres; then half a litre of oil is added and heated to prepare a medicated oil. Applying this oil to inflamed sores heals them very quickly.

Postpartum weakness: 20 g of patali bark is boiled in 2 glasses of water and consumed regularly for 1 month to cure postpartum weakness.

Varuna [*Crataeva nurvala* Buch.-Ham]

Amavata (rheumatoid arthritis): Mixing 1 teaspoon of varuna leaf juice with 1 cup of coconut milk and 1 teaspoon of cow's ghee twice a day regularly for a few days helps treat Amavata. Varuna bark and leaves are cut, slightly warmed, tied in a cloth and applied to the painful joints of Amavata patients. Even if the bark of varuna is cooked and the resulting oil is massaged in, the pain of the Amavata patient is relieved.

Ashmari (urinary calculi): For kidney or bladder stones, boil 20 g of varuna bark in 1 glass of water, add half a teaspoon of powdered varuna bark and 1 teaspoon of jaggery, and drink. In 1 month, the stones dissolve in the urine. It should be taken 3 times a day.

Gandamala (cervical lymphadenitis/scrofula): For swelling of the glands in the throat from one ear to the other (glandular tuberculosis), 20 g of varuna bark is boiled in 1 glass of water and consumed with 1 spoon of honey. Consuming it on an empty stomach twice a day regularly for 2 months provides considerable benefit.

Vidradhi (abscess/tumour): Adding half a teaspoon of crushed varuna bark to 1 teaspoon of crushed drumstick bark and taking it twice a day regularly for a few days is beneficial.

Medaroga (obesity/hyperlipidaemia): Taking the tender varuna leaves regularly for a few days is beneficial in Medaroga.

Khaira [*Acacia catechu* (L.f) Willd.]

Leprosy: Boiling the heartwood of the catechu tree and bathing regularly in that water for a long time is beneficial in leprosy. Along with this, 30 g of heartwood is soaked in 1 glass of water overnight and taken in the morning on an empty stomach regularly to cure leprosy.

Piles/wound healing: If the resin of the catechu tree is mixed with ghee, an ointment is prepared; applied on an infected wound, it dries up quickly. Applying this ointment on Arsha (piles) is also beneficial, and it is very beneficial for genital sores.

Raktapitta (bleeding disorders): 10 g of catechu tree flowers mixed with honey and taken 3 times a day regularly for a few days stops bleeding. The fruit of Reetha (soap nut) is burnt, and 1 pinch of catechu powder mixed with sugar is consumed twice a day; after seven days, bleeding piles are completely stopped.

Sweta Pradara/Rakta Pradara (leucorrhoea/menorrhagia): Boiling 10 g of Khadira in 2 glasses of water, cooling it to 1 glass and washing the vagina is very beneficial in Sweta Pradara/Rakta Pradara. Apply once a week on a regular basis.

Swarabhanga (hoarseness of voice): When the voice is hoarse, the powder of khaira mixed with til (sesame) oil is beneficial.

Mouth sores: All sores on the tongue, palate, teeth and gums are cured by mixing the powder of khaira with rose water and putting it in the mouth.

Cough: Equal quantities of Khadira powder and black pepper are mixed in a thick paste of the bark of the Babool (*Acacia nilotica*) tree, made into pills the size of pea seeds and kept dry. Cough is relieved by sucking 2 tablets every three hours.

Sleep sickness: Taking 1 spoon of Khadira powder twice a day with cold water regularly for a few days removes sleep sickness.

Prameha/Sanaimeha (urinary disorders/diabetes): Taking a handful of the bark of the Khadira tree, soaking it in 2 glasses of water for one night and drinking 1 glass each in the morning and evening removes this Prameha in a few days.

Ear infection: Wash the infected ear with khadira bark decoction. Done regularly for a few days, it gives results.

Atisara/Amatisara (diarrhoea/mucoid diarrhoea): Mix equal quantities of Khadira powder and crushed cinnamon bark and make pills the size of peas. Taking 2 pills 3 times a day cures Atisara. Half a gram of Khadira powder is served with honey in Amatisara.

Agibathu [*Premna mucronata* (Roxb.)]

Sheetapitta (urticaria): For Sheetapitta, 10 g of agibathu root mixed with 1 glass of water is taken regularly twice a day for 7 days. It is also used in a dose of 1 teaspoon mixed with rock sugar. Other allergic diseases are also relieved by this application.

Amavata (rheumatoid arthritis): A decoction of the whole plant (Panchanga) of agibathu, one cup given to drink twice a day, relieves the body pain of the Amavata patient. Used regularly for a few days, swelling of the knee joints is also cured.

Arsha (haemorrhoids): Agibathu leaves roasted in ghee without salt and consumed regularly for a month cure Arsha (haemorrhoids).

Enlargement of testicles: If the skin is loose and the testicles are hanging down, applying warm agibathu leaf paste regularly for about 1 week causes the skin to shrink and return to its previous state.

Meda Vriddhi (obesity): 20 g of raw agibathu bark, or 10 g of dried bark, is boiled in 1 glass of water until reduced to half; then adding 1 g of Shilajatu (shilajit) and consuming it twice a day removes obesity.

Arjuna [*Terminalia arjuna* (Roxb.)]

Cardiovascular disease: In all cases of weakness of the heart, powdered Arjuna bark is beneficial — in angina pectoris (in which pain on the left side of the chest occurs on exertion and spreads to the little finger of the left hand) and oedema of the heart. Regular use of Arjuna bark powder is very beneficial in heart disease. In all these cases, 4 g of Arjuna bark is mixed with 1 cup of milk and consumed twice a day on an empty stomach for 1 year.

Fracture/broken bones: Taking 4 g of powdered Arjuna bark mixed with ghee and sugar in milk regularly for a few days helps broken bones heal quickly, and reduces swelling and sores.

Raktapitta (bleeding disorders): Soak 1 handful of raw Arjuna bark in 1 glass of water overnight and drink the water in the morning to get rid of bleeding disorders. Arjuna bark mixed with mango and jamun bark gives better results. In haemoptysis, crushed Arjuna bark is processed with the juice of Vasa (*Adhatoda vasica*) leaves 7 times, and 1 spoonful with cow ghee and honey is given twice a day for a few days. Raw Arjuna bark taken in cow's milk along with honey is used in dysentery.

Bhasmagni (excessive appetite/polyphagia): Mixing 10 g of powdered Arjuna bark with 100 g of wheat flour and buffalo milk to make halwa relieves people suffering from Bhasmagni.

Mouth ulcers: Arjuna bark mixed with til (sesame) oil and held inside the mouth cures mouth ulcers.

Earache: Warming Arjuna leaf juice slightly is beneficial in earache.

Shukrameha (spermatorrhoea/semen in urine): If there is semen in the urine, half a spoonful of crushed Arjuna bark mixed with half a spoonful of white sandalwood powder and consumed twice a day regularly for a few days is beneficial.

Wound: Arjuna leaves pressed on a freshly cut wound dry it very quickly.

CONCLUSION

The present ethnomedicinal study highlights the rich traditional knowledge and therapeutic practices associated with the medicinal plants of the Gandhamardan hill region of Odisha. The documented plant species are widely utilised by indigenous communities for the management of various ailments, reflecting the deep-rooted relationship between local biodiversity and traditional healthcare systems. This study emphasises the importance of conserving these valuable medicinal resources and preserving indigenous knowledge for future generations.¹⁵ Further pharmacological and clinical investigations of these plants may provide scientific validation and contribute to the development of novel herbal formulations and integrative healthcare approaches.

REFERENCES

1. Shyma TM, Devi Prasad AG. Traditional use of medicinal plants and its status among the tribes in Mananthavady of

- Wayanad District, Kerala. World Research Journal of Medicinal and Aromatic Plants. 2012;1(2):22–26.
2. Poddar S, Sarkar T, *et al.* Indian traditional medicinal plants: a concise review. International Journal of Botany Studies. 2020;5(5):174–190.
3. Arya R, Singh DC, *et al.* An overview of ethnomedicine and future aspect of ethnomedicinal plants. International Journal of Ayurveda and Pharma Research. 2016;4(5):29–33.
4. Sahu SC, Dhal NK, Bhadra AK. Arboreal taxa diversity of tropical forests of Gandhamardan hill range, Eastern Ghats, India: an approach to sustainable biodiversity conservation. Taiwan. 2010;55(3):208–215.
5. Bhadra AK, Dhal NK. Tree seedling diversity in the protected natural forest of Gandhamardan hill ranges. The Bioscan. 2010;2:451–459.
6. Pattanayak SK, Bhadra AK, Kar PK. A review and conservation strategy on the Biodiversity Heritage Site of Gandhamardan Hills in Western Odisha, India: sustainable strategies for managing geoheritage in a dynamic world. 2025. p. 271–288.
7. Dash SK. First report on Odonates from Gandhamardan Hills, Western Odisha, India. Entomologia Hellenica. 2025;34(1):1–8. <https://doi.org/10.12681/eh.38474>
8. Bhadra AK, Dhal NK, Nabin and Sahu SC. Indigenous herbal treatment for Chronic Suppurative Otitis Media (CSOM) among Kondh tribe of Bolangir District, Odisha, India-A case study. Biohelica. 2010;1(1):38–40
9. Kirtikar KR, Basu BD. Indian Medicinal Plants. 2nd ed. Vol. I–IV. Dehradun: International Book Distributors; 1987.
10. Council of Scientific and Industrial Research. The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products (Raw Materials Series). New Delhi: CSIR; 1948–1976.
11. Saxena HO, Brahmam M. The Flora of Orissa. Vol. I–IV. Bhubaneswar: Regional Research Laboratory and Orissa Forest Development Corporation; 1994–1996.
12. Chopra RN, Nayar SL, Chopra IC. Glossary of Indian Medicinal Plants. New Delhi: Council of Scientific and Industrial Research; 1956.
13. Jain SK. Dictionary of Indian Folk Medicine and Ethnobotany. New Delhi: Deep Publications; 1991.
14. Anonymous. The Ayurvedic Pharmacopoeia of India. Part I, Vol. I. New Delhi: Government of India, Ministry of Health and Family Welfare, Department of AYUSH; 2001.
15. World Health Organization. WHO Traditional Medicine Strategy 2014–2023. Geneva: World Health Organization; 2013.

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