

Traditional Knowledge and Ethnomedicinal Practices of Maram Tribe in Manipur

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ABSTRACT Traditional knowledge has been crucial in sustaining the health and well-being of indigenous tribal communities worldwide. Maram Nagas have a rich repository of ethnomedicinal practices primarily based on locally available plants, animals and minerals. This paper expounds on the role of traditional knowledge and herbal plants in healthcare practices among the Maram Nagas of the Senapati district in Manipur. It analyses the usage, preparation methods, and efficacy of the locally available and widely used plants in their everyday life. This paper is an outcome of exploratory research documenting 61 medicinal plants, with various parts used for minor ailments. The paper observes that Maram Nagas acquired deep knowledge and skills on traditional medicines and their perceived and experienced efficacy through generations. It argues that the availability, accessibility, and cost efficiency of herbal plants resulted in their widespread use and acceptance in the community.

INTRODUCTION

India comprises diverse ethnic identities, including distinct languages, religions, customs, traditions, and cultural practices. This diversity contributes to the country's unique identity, history, and cultural richness, distinguishing it from the rest of the world. The country is home to numerous ethnic and linguistic groups, with over 2,000 ethnic communities and more than 1,600 languages spoken. It has one of the largest conglomerates of indigenous communities spread across the different states. In India, an estimated 104 million indigenous people live in over 705 indigenous tribes, accounting for approximately 8.6 percent of the country's population (International Work Group for Indigenous Affairs 2023). Negi and Azeez (2022) highlighted that indigenous people are regarded as the custodians of traditional knowledge, as their cultural practices, beliefs and way of life are closely tied to the natural environment and its resources (Bhattacharjee 2023). Bhattacharjee and Rongi (2022) have analysed that indigenous communities acquired and conserved an understanding of hunting and gathering, agriculture, traditional medicines, and general day-to-day survival and well-being skills critical to their lives and

identities. The traditional knowledge systems have played a vital role in addressing the different developmental challenges that the country faced in its journey toward progress.

Traditional knowledge systems have been playing a vital role in maintaining the health and well-being of people in India until the latter part of the last century. In this context, the evolution of Indian medicinal systems, such as Ayurveda, Siddha and Unani, emerged from integrating ancient knowledge systems practised among indigenous groups and communities. This system relied on plants, minerals, and animal products and observably had very few side effects compared to Western medicines (Parveen et al. 2022). The traditional system is a 'holism', an integrated discipline of biological beings with social, cultural, and environmental dimensions, and it is through the traditional healthcare system that the field of medical anthropology emerged (Sharma 2019). In this context, traditional medicine includes medicines derived from plants, animals and minerals, as well as customs, rituals, and ways of life that the community practices. Herbal medicine is one of the traditional healthcare practices used by the tribes and rural people, passed down for generations through oral narrative, and they are integral to primary

healthcare among the indigenous people (Dutta and Sengupta 2018). The use of traditional medicine and treatment by practitioners is more prevalent among particularly vulnerable tribal groups (PVTG), living primarily in hard-to-reach, rugged and hilly terrain regions and poor health literate (Sonowal and Konch 2021). Further, several studies highlighted that in the healthcare utilisation among the tribes, there is an inclination towards traditional medicine because it is acceptable, available, affordable and accessible (Sonowal and Konch 2021; Negi and Azeez 2022; Prasad 2022; Patra et al. 2023; Sahoo et al. 2023).

India boasts rich biodiversity, as Vedavathy (2002) observed that over 45,000 species of wild plants are found, and of these, 7,500 plants are used for medicinal purposes by indigenous people. Shankar (2007) found that indigenous tribes in India use about 400 plants, animals, birds and reptiles as medicines for various ailments. The tribal communities have a deep attachment and dependency on herbal plants and good knowledge of traditional medicinal plants for treating different illnesses (Sahoo and Pradhan 2021; Negi and Azeez 2022). India's northeast has the largest concentration of indigenous ethnic identities with unique cultures, traditions and languages. Northeast India is a haven of biodiversity, offering immense resources for traditional knowledge and practices. It is home to more than 200 ethnic communities with a tremendous wealth of orally passed-down traditional knowledge systems as their identity (Chakraborty et al. 2012). The northeast region is home to diverse cultivable flora and is claimed to be a 'paradise for ethnobotanists and anthropologists' (Mao and Roy 2016). Bhuyan (2015) estimated that the tribes of the northeast region use 1,963 ethno-medicinal plants. Deb et al. (2023) presented 100 medicinal plants used for diabetes in northeast India. The rich biodiversity provides the people in this region with abundant resources. Bora et al. (2016) observed that considering a disease like malaria, the tribes in the northeast use 64 plants as a treatment. Yaipharembi et al. (2023) found the use of wild medicinal plants and the extensive use of naturally available plants and minerals in Manipur, their day-to-day life in the form of food, medicine, and income generation. Konsam et al. (2016) have analysed the various edible plants with nutritional and me-

dicinal value that are part of people's daily diet in the northeast region.

Several studies highlighted the traditional expertise and ethnomedicinal practices of tribal communities in the northeast region. Lokho (2012) provides a glimpse into the folk medicinal plants used by the Mao tribe, while Devi et al. (2015) and Singh et al. (2015) shed light on the medicinal flora employed by the hill people of Manipur and the people of Nagaland respectively, for specific ailments like jaundice. Similarly, Salam and Jamir (2016), Shimray and Lungleng (2017), Sumi and Shohe (2018), Ozukum et al. (2019), Temsutola et al. (2019), Konyak and Swuro (2021), and Vemai et al. (2022) delve into the ethnomedicinal practices of different tribes in Manipur and Nagaland, documenting the diverse array of medicinal plants used and the ailments they address. The study by Yepthomi et al. (2023) not only adds to this body of knowledge but also emphasises the prevalence of leaf usage among medicinal plants and provides insights into common ailments treated across various districts of Nagaland. Together, these studies contribute to the preservation of traditional knowledge and offer avenues for further research in ethnobotany, pharmacology, and public health, aiming to harness the therapeutic potential of these traditional remedies while ensuring their sustainable use and conservation.

Objectives

The paper is the outcome of an extensive study on the traditional healthcare practices among the Maram Nagas with the following objectives.

1. To describe the traditional knowledge and herbal plants in healthcare practices.
2. To explain traditional medicine's usage, preparation methods, and efficacy of the locally available and widely used plants in everyday life.

Study Area and Profile

The Maram tribe is one of the distinct ethnic Naga tribes in the Senapati district of Manipur. According to the District Census Handbook of 2011, Maram people inhabit around 27 villages with a total population of 43,577, of which 22,796

are males and 20,781 are females, with a literacy ratio of 50.87 percent (District Census Handbook 2011). The Maram language is considered one of the endangered languages by UNESCO. Maram has been recognised under the 'Particularly Vulnerable Tribe Group' or PVTG, the only Naga tribe and second in northeast India after Reangs from Tripura (Particularly Vulnerable Tribal Groups 2024). The primary occupation is agriculture, and rice is the staple food of the Maram. The Marams are richly endowed with natural resources and unique in cultural heritage, traditions, and customs closely linked to the natural environment. Oral traditions such as folklores, folk songs, legends, proverbs, and myths passed down from the ancestors are crucial in defining the past and identity of a people.

METHODOLOGY

The present paper is based on a methodology encompassing qualitative and quantitative approaches grounded in empirical data collection. Conducted over an extensive period from February 2020 to December 2023, this timeframe enabled a thorough examination of the subject matter. Out of the 27 revenue villages identified for the Senapati district in the 2011 Census, 12 villages were chosen based on accessibility considerations and the willingness and availability of participants, particularly in light of the prevailing COVID-19 circumstances during the initial outreach for the study. This selection process ensured a practical and representative sample for the research endeavour. Primary data collection employed a simple random sampling technique, semi-structured interviews, and focus group discussions. By integrating various data collection methods, including interviews and group discussions, the study aims to capture diverse perspectives and experiences, thus enriching the depth and validity of its findings. In-depth interviews were conducted with 225 respondents from the Maram community to understand their awareness, knowledge and health-care practices in folk medicine. Ten focus group discussions were conducted with elders, women and youth to evaluate their sociocultural knowledge, attitudes, and practices regarding traditional medicines prevalent in the community. A total of 14 traditional medical practitioners

were interviewed to understand the treatment practices, utilisation of various herbal plants available in the region and preparation methods of medicine. Overall, the rigorous fieldwork and methodological rigour employed in this study position offer valuable insights into the subject under investigation.

RESULTS

Table 1 reflects the in-depth knowledge that the community has accumulated over the generations. The study collected 61 common plants used by Maram Nagas primarily as home remedies for various health conditions. The names of each medicinal plant in the local dialect are presented so that the person with knowledge of the language can quickly identify the medicinal plants by just hearing or reading the names. The Marams use different parts of plants for treating ailments, like the leaves, flowers, fruits, seeds, tubers, barks, rhizomes, stems, roots, twigs, tender shoots and whole plants. It was found that leaves were most used for the treatment. These plants are usually sourced from open places, agricultural fields, and forest areas and cultivated in backyard gardens. The common ailments treated are flu and fever, stomach problems, headache and migraine, sprains and fractures, body aches and pain, skin problems, insect bites, cuts and bruises, menstrual cramps and mother and child care.

Table 2 explains the knowledge distribution of respondents on traditional medicines for different ailments. It has been found that the knowledge of medications is high for common illnesses such as cuts, bruises, and muscle and bone problems. Nearly 80 percent of the respondents have demonstrated knowledge of traditional medicines or know of a medical practitioner or an elder who can provide the medicine to them. It is important to note that most of the medications that the respondents reported having knowledge and skills that they have developed in their day-to-day lives from their parents or elders in the family. The expertise and capacity to identify medicinal plants, prepare different medicines, and use them correctly to treat undesired health conditions is very important in rural settings. The study reveals that most of the families who lived in the villages have a fair

Table 1: Common medicinal plants and uses

<i>Name of plant</i>		<i>Parts used</i>	<i>Uses of the plant for illness and diseases with modes of use</i>
<i>Vernacular</i>	<i>Common</i>		
<i>Abak Kuraigai</i>	Indian spinach	Leaves	It is used for treating stomach problems and dysentery. The leaves' inflorescence is cooked and then eaten along with the meal.
<i>Abgiina</i>	Yam	Rhizomes	It is used for treating bee stings, wherein extracted juice from the rhizome is rubbed on the stung area to suppress and reduce pain.
<i>Alah rou</i>	Bottle/ash gourd	Fruits	It is used to treat stomach problems, jaundice, and diabetes. It is cooked and eaten, and the soup is drunk.
<i>Agaitii-nii</i>	Cucumber	Leaves and fruits	The fruit is used for skin problems, wherein a sliced piece is placed on the burn for coolant, and juice is applied to the pimples. It is eaten to treat liver and kidney problems. A handful of leaves are made into juice and consumed to treat dysentery.
<i>Apoukihiipa</i>	Thickhead weed	Leaves and tender shoots	The plant is used for ailments like diabetes, jaundice, piles, common flu and stomach problems. Two to three drops of juice are applied from the crushed leaf on the forehead to reduce body temperature and give relief. The herb is an antiseptic used to control bleeding of cuts, bruises, and wounds.
<i>Apourangtiiti / Kanemti</i>	Cape gooseberry	Leaves and fruits	It is used to lower fever wherein a handful of leaves are squeezed into juice and consumed, and bundles of leaves are patted on the forehead, soles of the feet, and palms to reduce temperature. The leaves and fruit are consumed to relieve diarrhoea, dysentery, and upset stomach.
<i>Bodonti /</i>	Guava	Leaves and fruits	The perennial plant is used to treat diarrhoea. A handful of leaves are crushed, extracted juice of two to three spoons is consumed, and fruit is eaten.
<i>Bura-kamn'ti</i>	Poison Berry	Fruits	It treats fever, cough and cold, headache and migraine. A handful of fruits are crushed, and half a glass of water is added and consumed. It is also cooked as porridge and consumed.
<i>Cocraigai/Kuraigai</i>		Indian pennywort	Whole plant The leaves are used to stop bleeding from cuts and bruises while working on the farm. Raw leaves are crushed and placed on the affected region to arrest bleeding. The whole plant is boiled, and the soup is consumed to cure constipation, stomach problems, and blood pressure. It is also used as a purgative and sedative.
<i>Gainam-namna/ Gainam-namching-</i>	Chinese chives	Whole plant	The whole plant treats eye pain, body aches, digestion problems, stomach discomforts, and gastric pain. It is also highly recommended for lactating mothers for quantity milk, and it is also used for skin problems and snake/ insect bites wherein the leaves are warmed up in the fire, then crushed and applied on the skin problem and bitten area to reduce the swelling used as a purgative.
<i>Gumjyi</i>	Banana	Stem and fruits	It treats stomach problems, diarrhoea, kidney stones and snake bites. The tender part of

Table 1: Contd...

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			the stem is cooked and eaten along with the meal for stomach problems and diarrhoea. A cup of juice extracted from the stem is drunk for kidney stones. The stem is placed on the bitten area to suck the venom when bitten by snakes.
<i>Hiipi/ Mahiila</i>	Sweet basil	Leaves and flower	The porridge is given to women during labour pain to boost energy. Fresh or dried leaves and flowers are used as cuisine, cooked with rice as porridge. It is an analgesic for fever, colds, coughs, migraines, and headaches and a purgative for bloating and abdominal pain.
<i>Japankihii-nii</i>	Crofton weed	Leaves	The leaves are commonly used for cuts, wounds, and insect bites to stop bleeding from cuts and bruises. As an antiseptic, the leaves are crushed along with saliva, and then extracted juice drops are pasted on the wounded area. Tender leaf juice is a sedative for stomach disorders and blood pressure (BP).
<i>Kabihiila / Tamtunii</i>	<i>Elsholtzia Griffithii</i> Hook. f.	Leaves and flowers	A handful of fresh or dried leaves and flowers are used for cough, sore throat, tonsils, migraine, and headache. Fresh leaves are eaten either raw or cooked. Leaf and ginger boiled in water are used for cough and sore throat. Fresh or dried leaves and flowers are also consumed as a salad for sedation of migraine and headaches.
<i>Kafgii dui</i>	Bamboo	Stem water	Tender shoots are taken as general nutritional food. Water collected from the mature bamboo stem treats colds and coughs by drinking the raw water.
<i>Kafiti/ kafii-rangbungti</i>	Pomegranate	Leaves and fruits	The fruit and leaves are eaten to lower fever and control dysentery, diarrhoea and vomiting. The herbal leaf is used as brew tea for any stomach upsets as a purgative.
<i>Kokchiipa</i>	Curcuma aromatica	Rhizomes	The collected plants are consumed fresh, dried under the sun, and stored. It treats stomach problems and digestion and is cooked and eaten with meals.
<i>Kalaolao-nati</i>	Gooseberry	Fruits, twigs, roots	The fruit is eaten raw for digestion and cold. The root is boiled and drunk to control diarrhoea. A small twig is used to clean the teeth as a toothbrush.
<i>Ka-naati</i>	Palm	Fruits	A handful of fruit is crushed, and then extracted juice is consumed to control diarrhoea.
<i>Kang-gai</i>	Bitter gourd	Leaves and fruits	The entire climber plant is kept after being sun-dried. Its leaves treat bodily aches, fever, colds and coughs, blood pressure, and other conditions. A handful of fresh or dried leaves are boiled and consumed with salt as a tonic and energy drink.
<i>Karananii</i>	Castor oil plant	Leaves	The leaves are used in postpartum treatment for mothers and their children. After birth, the mother receives a warm bath and massage in water heated by boiling four to five leaves. Boiling water is used for massage in cases of

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<i>Katbakihiinii</i>	Prickly chaff	Leaves	fracture, dislocation, or sprain, and leaves are used to pat the injured region to reduce pain and swelling. The leaves treat skin problems like blisters, ringworms, and scabies. The crushed leaves paste is applied to the affected area. Use for treating cuts and bruises to control bleeding from injuries and quick healing.
<i>Kavii</i>	Ginger	Leaves and rhizomes	The leaves are eaten as vegetables and salad, and the rhizome is used for rituals and to treat ailments. The rhizome is used for treating common flu, colds, and coughs, and it is eaten raw with salt or in the form of salad as sedation. Ginger is also used for skin allergies.
<i>Koitiinii</i>	Indian tobacco	Leaves	The leaves are dried and chewed for toothache as a sedation. It is also used to treat boils and wounds. The leaves are placed in the area for quick eruption. Some experts used <i>Koiti-nhii</i> and Staghorn wrapped with <i>Koiti-nhii</i> (tobacco leaf) to suck out the pus from the swollen area. For bone fracture/sprain/muscle cramps, a handful of leaves are crushed and applied to the area for mild sedation.
<i>Kungsanghiinii</i>	Quick weed	Leaves and flowers	The plant is an antiseptic for cuts and bruises wherein the paste of leaves is applied to the wounded area.
<i>Lamsalaima/ Ramsalai</i>	Chameleon plant	Leaves and roots	The leaves and roots are used, taken with meals, and eaten raw as salad as an appetiser and energy booster in Maram cuisine. The leaves are crushed and applied on cuts and wounds for speedy healing. However, one should not overeat, otherwise, it will cause body aches and pain.
<i>Lungsiihii / Modina/ Takpa</i>	Mint	Leaves and tender shoots	The leaves and tender shoots are eaten raw along with meals as an appetiser. The leaves are used for treating stomach aches and gastritis, which are considered antiparasitic for intestinal worms/tapeworms.
<i>Mahamgainii</i>	Water dropwort	Whole plant	Cooked leaves and soup are consumed to relieve stomach aches and period cramps and to prevent constipation.
<i>Mahinggai</i>	Roselle	Leave, flower, fruits	The leaves, flowers, and fruits are sun-dried. Juice of crushed flower sepals and leaves is used for treating stomach aches or bloating and as a purgative.
<i>Maroughii / Marouhii</i>	Sensitive plant	Roots	The roots treat ailments like swollen bodies, jaundice, urinary tract infections (UTIs), and insect bites. The roots are boiled in water and consumed as a purgative. It is also an antiseptic for snake bites and other poisonous insect bites. The freshly crushed root paste is applied to the bitten area.
<i>Masok</i>	Turmeric	Rhizomes	It is used for treating coughs. The rhizome is boiled with ginger and garlic and consumed to

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Name of plant		Parts used	Uses of the plant for illness and diseases with modes of use
Vernacular	Common		
<i>M'ngati</i>	Prickly ash	Seeds and leaves	control the cough. It is planted around the paddy field as a pesticide to protect crops from insects and snakes from destroying the paddy. The seeds are consumed to control blood pressure (BP). Leaves and seeds are consumed to give mild sedatives for toothache, common flu, cold, cough, and throat problems.
<i>N'Bu</i>	Stinging nettle	Tender shoots	The tender shoots treat burns wherein leaves are roasted over the fire, crushed, and placed in the burnt area to heal. The leaves stimulate blood circulation during extreme colds and faints in a person.
<i>N'Daipa</i>	Rhododendron	Leaves and flowers	The flowers are dried and stored. Fresh or dried are used for better digestion and to remove fish bone stuck in the throat, the flower is eaten or boiled to drink to flush out the bone.
<i>N'Dang-gai</i>	Knotweed	Leaves	It has been found that consuming Knotweed helps reduce body aches and pain, and diabetic patients use it.
<i>N'Kakunanii</i>	Buddleja Asiatic	Leaves	It is used for diabetes wherein a handful of leaves are boiled and drunk to control sugar.
<i>N'Tingnanhii/ Pidounii/ Pokjounii Pesiiri</i>	Spanish needle	Leaves	A handful of leaves are used for steaming to treat sinus and nose bleeding.
	Garlic	Leaves and bulbs	It treats common flu, fever, cough, and blood pressure. It is consumed raw, in porridge, tea, and garlic mixed with turmeric and ginger.
<i>Piitak-gai/ Tampanii-gai</i>	Broadleaf plantain	Whole plant	The tender plant is used to treat stomach upsets and disorders. Termite soil and <i>Patak-gai</i> (broadleaf plantain) are mixed to treat bone fractures and muscle sprain.
<i>Rakuitat</i>	Angel's trumpet	Leaves	The crushed fresh leaf juice is used as a sedative for nettle stings. It is also used as an antiseptic for snake or insect bites. The leaves are crushed, and the juice and paste are applied to the bitten area.
<i>Ramchi</i>	Indo-malayan taro	Tubers	The tuber is consumed as fresh or dried. Lactating mothers commonly use it for the quality and quantity of breast milk. It helps to relieve stomach aches and bloating.
<i>Ramnok</i>	Himalayan Mint	Leaves	The juice made from leaves treats body aches, colds and coughs, and stomach problems. The crushed leaf is used to rub or to give a mild massage for stomach aches. It is used during postnatal care wherein a handful of two or three leaves are added to boiling water for a warm bath.
<i>Rangdigai</i>	<i>Trichodesma khasianum</i> C.B.Clarke	Leaves and flower	The aerial parts and leaves are consumed for vegetables, cuisines such as simple boiled or porridge, leaves, and flowers. It is a sedative for stomach disorders, gastric dysentery, and jaundice. People with piles and constipation problems are highly recommended to take this plant.

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<i>Rangkananii</i>	Nongmangkha	Leaves and flower	The leaves are boiled in water and consumed to lower the fever and sedation for stomach problems, heartburn, chest pain, pneumonia, and body aches. Leaves are boiled and are used for warm baths to relieve body aches and pain.
<i>Rangtamrii</i>	Water pepper	Leaves	It is used to treat skin rashes and toothache. A handful of leaves are crushed and applied to the area. It is also used as a pesticide.
<i>Rubang-gaiti</i>	Papaya	Leaves and fruits	One or two tender leaves are made into juice and consumed to treat fever and jaundice. It is used as anti-rabies for dog bites wherein the unripe papaya milk drops are applied on the bitten area to absorb the poison. The unripe fruit is consumed as a contraceptive.
<i>Salimp</i>	Acoruscalamus	Rhizomes	The plant is used for fever, dysentery, cough, and toothache. The rhizome is eaten raw.
<i>Saroutpot-ti</i>	Passion fruit	Leaves	The tender leaves are boiled and eaten along with meals, or juice made out of fresh leaves is taken to lower fever and as sedation for liver, digestion problems, stomach problems, gastric, diarrhoea, blood pressure and menstrual cramps.
<i>Sataigobi</i>	Cabbage	Leaves	The leaves are consumed for better digestion. It is eaten along with meals to prevent stomach ulcers. The crushed leaves paste is applied to cure pimples.
<i>Siilamhii</i>	False daisy	Tender shoots	The leaves treat skin problems, scabies, and cuts and bruises. The crushed leaves are applied to the area to stop bleeding, quickly heal, and prevent infection.
<i>Siimiiti</i>	Chinese sumac	Fruits	The fruit treats indigestion, stomach upset, headache and migraine. The herb is made into tea and consumed. The seed is ground, and the powder is eaten with a pinch of salt and chilly.
<i>Siiramgaiti-nii/ Kataimeigaitinii</i>	Creeping woodsorrel	Leaves	The whole plant is either eaten raw or crushed, and juice is drunk to treat jaundice and UTI. For skin problems like scabies and itching, crush the plant and apply a few extracted drops on the area.
<i>Sung-ngai</i>	Thatch grass	Leaves	The leaf is crushed and applied to the wound to stop bleeding from cuts and bruises.
<i>Takiitirak</i>	Yellow nightshades	Seeds	The ripe seed is dried/smoked and roasted, and then a pinch of ground powder is applied to the toothache.
<i>Taksiinii</i>	Fern	Leaves	The tender shoot is consumed to relieve body aches and pain and as a purgative and steam for treating sinuses.
<i>Tiimpai</i>	Mugwort	Leaves	The aromatic leaves are used to stop the bleeding of cuts and bruises. The leaves are made into a paste with saliva and applied to the affected area. A handful of leaves are crushed, the juice is extracted from one spoon for children, and two spoons for adults are given to treat dysentery.

Table 1: Contd...

Name of plant		Parts used	Uses of the plant for illness and diseases with modes of use
Vernacular	Common		
Tiimpai-paimii	Wormwood	Leaves	It treats diarrhea, stomach aches, headaches, and menstrual cramps. A handful of fresh leaves are crushed, and then extracted juice is taken orally. For cuts and bruises, a handful of leaves are crushed and applied to the wounded area to control bleeding and as an antiseptic.
Tiiti/ Tiirana	King chilli	Fruits	The fruit is used as a sedative for headaches, migraines, and digestion, and the fruit is eaten with salad and cuisine. A few drops of chilli boiled water are applied to the affected area to treat ringworms. Cooked or boiled chilly water quickly heals wounds, cuts, and bruises.
Tingtii	Cinnamon	Barks	The barks are eaten to relieve cough and throat problems.
Tuiniiti	Raspberry	Roots	It treats dysentery, common flu, cold and cough, viral fever, and liver. The root is crushed, and the extracted juice is consumed.
Tungsiiti	Wild olive	Fruits	The fruit is used for dysentery and diabetes.

Source: Authors

knowledge of the medicinal properties of different plants.

Table 2: Knowledge of traditional medicines

Categories	N=225	Percentage (%)
Common flu	200	88.9
Cold and cough	207	92.0
Headaches and migraines	203	90.2
Gastrointestinal problem	177	78.7
Food poisoning	46	20.4
Cuts or bruises	211	93.8
Sprains/muscle cramps	178	79.1
Skin problems	72	32.0
Snake or insect bites	79	35.1
Menstrual care	20	8.9
Pregnancy care	99	44.0
Delivery care	100	44.4
Care for newborn	96	42.7
Postnatal care	130	57.8

Source: Authors

Table 3 indicates the respondents' first treatment option for various illnesses. The dependence on traditional knowledge is evident from the choices, and it was found that for most respondents, traditional homemade medicine was the first treatment choice. For indigenous communities, the treatment choice for the undesired state of health depends on their historical experience,

Table 3: Healthcare choices among the Marams

Categories	Frequency	Percentage (%)
Traditional home-based medicine	200	89
Over-the-counter medication	13	6
Consult a medical practitioner	12	5
Total	225	100

Source: Authors

ences, beliefs, and understanding of the causative factors. Among the Marams, curative action generally starts with using plant remedies at home, followed by seeking help from a traditional herbalist or supporting a traditional spiritual healer according to the severity and nature of the health condition.

Table 4: Factors affecting the choice of traditional medicine

Categories	N=225	Percentage (%)
Cost-effectiveness	190	84
Accessibility and availability	180	80
Knowledge	192	85
Effectiveness of TM	75	73
Lack of medical personnel	150	33
Cost of allopathic medicine	165	67
Do not use traditional medicine	25	11

Source: Authors

Table 4 indicates the key factors influencing the preferred choice of traditional medicine for the Maram Nagas. The indigenous communities' health-seeking behaviour is affected by knowledge, acceptability, availability, affordability, and accessibility (Sonowal and Konch 2021; Negi and Azeez 2022). This study also proves the case of Maram Nagas, with most respondents citing their knowledge of traditional medicine's effectiveness, affordability, and wide availability as the primary reasons to opt for traditional medicines. The study further revealed that the existing infrastructural facilities across the region are grossly inadequate, limiting access to modern healthcare services. There is a general refrain from the respondents in the study area concerning pregnant women not opting for institutional delivery about the poor road conditions and lack of public transport systems that make the hospital visit time-consuming, tedious and costly. Almost all pregnant women from the remote villages in the study have reported the use of home remedies and services of the local traditional healer for ante-natal and postnatal care.

DISCUSSION

The contribution of home remedies to the overall healthcare outcomes of the individuals and families among the Marams is discernibly high, as is the case with indigenous communities in the region and elsewhere in the world. The geographical remoteness of their habitat, insufficient outlay of healthcare delivery system and related infrastructure, limited financial resources, and constraints due to knowledge and perceptions regarding modern healthcare have all contributed to the continued dependence and confidence in traditional medicine and practitioners (Narzary 2015; Sonowal and Konch 2021; Negi and Azeez 2022). The accessibility and availability of public healthcare in the region is considerably skewed due to the ge-populational characteristics unique to this region. The communities across these regions experience similar constraints and disadvantages regarding access to modern healthcare services (Marbaniang 2020; Swargiary and Lhungdim 2021; Negi and Azeez 2022; Cáceres et al. 2023). Ensuring adequate modern healthcare delivery through the public health system would take

decades and considerable input of resources. The paper argues that Maram's knowledge of traditional medicine and home remedies is formidable, with most respondents able to identify plants that grow nearby. It was found that people who know the medicinal properties of local plant species mainly gained their knowledge from observation and oral instructions from older generations. Similar observations have been made in the studies by (Sahoo and Pradhan 2021; Negi and Azeez 2022; Bhattacharjee 2023).

Traditional medicine is found to be exceptionally effective in addressing common illnesses that affect families among the Maram. It may be observed that similar experiences have been reported in the communities in the region (Marbaniang 2020; Negi and Azeez 2022; Cáceres et al. 2023). It is pertinent to note that the changes in lifestyle, climate, environment, and exposure to the outside world have increased vulnerabilities. Communities need access to modern healthcare facilities and personnel to ensure better health outcomes. However, it is also essential that traditional health systems are promoted to provide comprehensive coverage of the healthcare needs of the communities.

It is evident from the above findings that traditional medicine and home remedies play a vital role in the healthcare practices of the Maram population. It has been observed that appreciation of the importance of herbs and animal species has been instrumental in preserving the cultural identity and conserving the species (Bhattacharjee and Rongi 2022; Cáceres et al. 2023). The knowledge and skills in utilising plants and animals for medicine have been empirically developed through the centuries. These plants are cost-effective and accessible alternatives to modern medicine in resource-constrained settings. The use of traditional medicines enhances the capacity of individuals to have control over their healthcare decisions and empowers them to achieve holistic well-being. However, these treatment practices must be adequately understood and documented by those who use them as part of their basic survival techniques passed down through generations (Vadeo 2023).

CONCLUSION

The paper concludes that most Maram households have a fair understanding of the

medicinal properties of different plants. The near-universality of knowledge distribution of medicinal plants among the people is a resource, which still needs to be adequately measured. Most of the diseases are controlled and prevented during the very onset of the disease itself. Traditional preventive, curative and recuperative practices have made formidable contributions to the overall health status of the people. The people hold traditional medicinal practices in high regard to their perceived and experienced effectiveness. The general perception of the effectiveness of the medicine is derived from their experience, as most people use herbal medications daily. Most of the Marams have an innate knowledge orally passed down through generations. The study underscores the deep attachment of the Marams to nature, the rich biodiversity and the availability of the plants. Over generations, the Marams have been able to sustain and practice traditional medicines due to their accessibility, cost-effectiveness and efficiency, particularly in the resource-constrained, hard-to-reach geographical setting of the Senapati district in Manipur, India.

RECOMMENDATIONS

Traditional herbal plants offer a promising avenue for delivering primary health care, particularly in regions with limited resources, like the hill terrains of northeast India. Understanding and utilising such plants benefits individuals and improves the overall health of communities in these areas. Traditional plant medicine research is growing, presenting opportunities to advance human health. By delving into the properties of plant-derived chemicals and their mechanisms of action, researchers can develop novel medications and therapies for various conditions. Additionally, exploring the traditional uses of plant medicines can uncover new potential applications and insights into their safe and effective utilisation across generations. While traditional medicine, including Ayurveda, is gaining traction and acceptance, comprehensive studies and clinical trials are imperative. The authors stress the importance of subjecting ethnomedicinal plants to pharmacological testing to ascertain their efficacy. Promoting traditional medicines ensures equitable access to affordable,

effective, and sustainable healthcare services for all.

AUTHOR CONTRIBUTIONS

Judith Huidina's contributions include conceptualisation, methodology, data collection and analysis, literature review, and writing-original draft.

Srikanth Yamsani's contributions include conceptualisation, methodology, literature collection, writing-review, editing and supervision.

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