

Ethnomedicinal Practices of the Paudi Bhuiyan Community of Odisha

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Abstract

The Paudi Bhuiyan is one among the PVTGs of Odisha, predominantly inhabiting the bordering regions of Deogarh, Sundargarh, and Keonjhar districts. The deep-rooted cohabitation with nature over generations, the *Paudi Bhuiyan* community has developed a unique body of knowledge based on live experimentation on trial and error for healthcare practices. Using the age-old traditional knowledges they have become proficient in preparing natural remedies from available flora and fauna in sustainable and ecologically responsible bases that foster a harmonious living of the community with nature. Despite the existence of various home-grown health care practices, the present paper explores the use of flora species for treating various ailments. A total of 40 different flora species is primarily found; those have been used by the Paudi Bhuiyan community of the sample area. Each plant holds great importance within the community and is considered sacred.

Keywords: Plant Medicine, Traditional Knowledge, Health Care Practices

Introduction

Practice of flora species as part of the healthcare system is an important component among tribals as a whole and more particularly among Paudi Bhuiyan in Odisha. The practices of medical translation flora species among the Paudi Bhuiyan are culturally constructed, that includes the conception of the body, illness causation, and social norms. This traditional health care knowledge roots from the lived experience of ages of community living in the sample area and its transmission across generations. The cultural construction of medication also follows a system of belief, medicine and process of application or consumption (Quinlan, 2022). The medication system of all most all indigenous society provide an insight of plants resources-based medicine (Gains;1992, Kleinman; 1980 and Nichter 1992). The plants medicine is not only relevant based on geographical location but also demonstrates an effective antiviral therapy for healing different diseases among the sample population. The **Rauriya**¹, among the Paudi Bhuiyan does not possess any institutional medical degree, however, he is recognized as the health care facilitator by the community members in the sample habitation. The people of Paudi Bhuiyan community continues to belief on the traditional healer due to its easy accessibility, effectivity and affordability despite of the intervention of government allopathic health care facilities. The substances of plant such as flowers, seeds, skin and leaves, are the basics of the preparation of traditional medicines for healing. Sometimes the

¹ The traditional medicine man among the *Paudi Bhuiyan* tribe.

process of medication is interwoven with mystical practices. The present paper tries to documents disease specific use of substances of plants with its mode of preparation and the pattern of consumption.

Nature-Based Dependency

Living in the remote and inaccessible hilly track for ages, the tribal people develop a sense of cohabitation in the surroundings. They acquire the knowledge from surrounding to use available resources around the habitation to maintain livelihood for sustenance and plant resources for medication and health care facility. Balick and Cox (1996) refer to the dependency of Amazonian tribes on the forest biodiversity of their habitation for primary health care. Kala et al. (2006) study the tribes in the Indian Himalayas and found over 120 plant species used in ethnomedicine, highlighting strong biocultural links. The tribal people of Odisha practice various kinds herbs and plants available in the surrounding for medication to improve one's health (Sahay, 1892, pp. 24–26). The majority of tribal people used traditional practices to treat illnesses in both humans and animals. In remote locations, the locals use traditional wisdom to treat a variety of illnesses. In order to heal a variety of human and animal ailments, tribal and aboriginal populations frequently use ethnomedicines. For instance, the "Dongria Kandha," a tribe in the Kandhamal area of Odisha, India, use ten species of tubers from the *Dioscorea* genus as food and medicine to treat a variety of illnesses (Parida and Sarangi, 2021).

Cultural Embeddedness and Transmission of Knowledge

Indigenous knowledge is unique to any particular culture or society. It is referred to as 'local knowledge', folk knowledge, traditional knowledge and traditional wisdom those are embedded in the socio-cultural practices of the people. Nazarea (1999) understand the existence of ecological knowledge in socio-cultural practices in a specific context. Rajasekharan et al. (2000) document how tribal healers in Kerala, India, maintain intricate knowledge systems that are deeply embedded in folklore and mythology. Traditional knowledge is a knowledge-practice-belief complex (Berkes 1999). According to Mariene Brant Castellano (2000), Indigenous knowledge evolved from three sources: Traditional knowledge, Empirical knowledge, and revealed knowledge. That knowledge is revealed through dreams, visions, and intuitions. "Sometimes knowledge is received as a gift at a moment of need; sometimes it manifests itself as a sense that the time is right..." (Castellano, 2000, p.24). Indigenous knowledge is unique, traditional, and local knowledge existing within and developed around specific conditions of women and men indigenous to a specific geographic area (IDRC, 2005). Ethnomedicine mainly refers to the traditional medical practices concerned with the cultural interpretation related to health, diseases, and illness that address the healthcare process and healing practices (Krippner and Staples, 2003). This study aims to translate health-related theories and knowledge that people acquire through their cultural background. Every community has its own ethnomedicine or medical culture, which forms the foundation of the culture's medical reasoning or common sense (Quinlan, 2011; Panor et al., 2020). Fold medicine and indigenous medicine are some names for it. The term "ethnomedicine" describes the entirety of traditional society members' health, knowledge, abilities, values, beliefs, and practices, encompassing all clinical and non-clinical activities that represent their medical requirements (Foster & Anderson 1978). Joshi (2019), The most significant feature of traditional healing systems is continuity in the sense that the knowledge, compounds, practices, and folklore about what illness is, how it manifests, how it is treated, and most importantly, how it is managed, are passed down from mother to daughter and father to son. As such, they constitute the fundamental curricula for socialisation and enculturation. Nonetheless, healing mechanism expertise and

use are dynamic and not merely theoretical. On the contrary, it is very active and practical; it is continuously used in an array of situations, which leads to some kind of knowledge update in society. A crucial factor in the socioeconomic improvement of communities worldwide is the profound relevance of ethnomedicinal wild flora. Traditional medicine frequently serves as both a vital healthcare resource and a significant economic sector that supports local economies, creates jobs, and preserves cultural traditions. This inherent relationship between culture and pharmacology, as well as between human health and the environment, necessitates a comprehensive examination of how ethnomedicinal wild flora impacts socioeconomic development and human well-being. The global situation emphasises how almost 80% of people worldwide rely on traditional medicine for their primary medical needs. The use of ethnomedicine in many developing countries isn't just a personal preference; it's frequently motivated by factors including accessibility, cost, cultural significance, and the effectiveness of these traditional treatments. **(Anwar, Qureshi, Sarwar, Siddiqi, & Ahmad, 2024). Hughes (1968)** coined the term ethno-medicine to describe "those beliefs and practices that are not associated with sickness which are an outcome of indigenous cultural development derived from the conceptual framework of modern medicine." It encompasses the locals' understanding of health, illness, and sickness as well as their classification criteria and procedures. According to **Geest (1997)**, almost all African medical theories have a social orientation. Illness description and explanation tend to be scarce in social discourse and are primarily kept secret within the kin group. How to treat a particular illness, identify its cause and origin, and assist a person in recovering from it depends on the quality of human relationships. Dysphoria is linked to feelings of jealousy, anger, and moral wrongdoing. Social beliefs hold that witches and ancestors can bring illness, bad luck, and danger, and they play a vital role in these. When a community is disrupted, community members' health deteriorates. Therefore, when one family member becomes ill, it is perceived as affecting the entire family. The specific group to which the sick person belongs is accountable for coming up with a solution. He also mentioned that another feature of medical reasoning is its religious component. Religion influences all facets of human existence, including health and illness. While religious rituals focus on preserving or re-establishing the community's well-being, medical issues are frequently couched in religious terms. In these rituals, the medical professionals frequently assume the position of a religious expert. Three prominent features of contemplation of traditional medicine in Africa are the Healing professionals' emotional investment in the healing process, their practice's confidentiality, and their reward. The bond between a traditional healer and their patients is also affected by their concealment. The patient does not know and has to surrender to the healer. **(Buckley 1985; Wall 1988)**. Across the globe, ethnobotany is essential to the development of conservation and health initiatives. The restoration of ethnobotanical knowledge worldwide could be aided by several tangible actions, such as the proper documentation of ethnobotanical studies, the methodical and scientific research of traditional medicinal plants, scientifically guided plant part collection practices, the improvement of local classification systems, appropriate language communication, global efforts to preserve human cognition, cultural history, and beliefs by upholding world peace, the development of social networks globally, and database management system access **(Divya, Paul, Lata, Manikandan, & Ramasubbu; 2024)**.

Sustainable Management of Plant Resources

In the present day, without damaging biodiversity, the tribal people who coexist with the forest areas have achieved a profoundly balanced physical and mental state. Approximately 1963 medicinal plant species

are used for ethnomedicinal purposes by various tribal communities in northeastern India (**Sajem & Gosai 2006**).

North India's largest state is Arunachal Pradesh, which has not only an enormous heritage but also cultural and biological diversity this state is enriched by 26 major tribes and 110 sub-tribes with traditional knowledge. Each of these ethnic groups has its traditional knowledge that has been verbally transmitted from generation to generation and pertains to their respective faith and belief systems, methods of agriculture, and ethnomedical practices. However, a lack of appropriate conservation, recording, and promotional efforts may cause these priceless traditional knowledge systems to go extinct soon. (**Das and Tag 2006**).

Idolo et al. (2010) and Mahmood et al. (2011), ethnomedicinal surveys are an effective way to conserve traditional indigenous knowledge. In recent decades, the world has become more aware of medicinal plants and their traditional applications. In the Indian peninsula, a great deal of research has been done on different tribal people and their ethnomedical knowledge (**Swain et al., 2022; Marak and Mathew, 2022**). According to **Majhi & Mohapatra (2022)**, the indigenous people are true custodians of the therapeutic plants because of their beliefs and practices about healthcare. Through oral tradition, the knowledge of medicinal herbs is passed down from one generation to the next. The lack of medical services in the village and surrounding areas, as well as their ancient faith in natural remedies, are the reasons for their reliance on them.

Conflict and Collaboration of Ethnomedicine with Modern Medicine

For novel drug creation and development, ethnomedicinal plants play a prominent role in traditional herbal technology used by local traditional healers. (**Heinrich & Gibbons, 2001**). In modern times, allopathic medicines are very expensive and have side effects that have led people to believe in natural remedies. Ethnomedicine has become an alternative to modern treatment in today's era. So not only the government but also the people need to find out that those who do and acquire this knowledge are closely related to this ecosystem and document that knowledge (**Pandey and Pandey, 2010**). **Pati (2011)** states herbal medicine is mostly preferred. Herbal medicinal plants play a vital role in preventing many diseases. In many countries of the world, herbal medicine is going on, and its demand is very high. Due to the important contribution of plants to healthcare, research on this topic has been initiated with great vigour. **Blake (2014)** refers the practice of using herbal medicine is widespread worldwide. Slowly, people are realising that the natural way of making medicine based on these herbal plants is good enough. In this modern era, scientists and doctors are recognising this knowledge as giving very good results.

Before the advent of modern allopathic medicine, herbal medicine was practised in most communities in different parts of the world, following the traditional healthcare system. This traditional knowledge continues to be practised among tribal communities living in remote areas, and it's considered very important. (**Mukherjee and Wahil;2006**). From the Pakyong subdivision in eastern Sikkim, 60 beneficial plant species from 38 families were reported to be used for local health care needs. Ten of these species were veterinary valuable (**Tamang et al. 2023**).

Conceptual and Theoretical framework

Some of the earliest medical techniques known to man originated in Mesopotamia, which is sometimes referred to as the "Cradle of Civilization." Ancient societies with profound intelligence, such as the Sumerians, Babylonians, and Assyrians, held the view that supernatural forces might be the source of

illness. They combined this concept with the use of natural remedies to create a complicated mixture. Treatment for hundreds of illnesses, including small wounds, fever, and disease, can be found in the oldest clay tablets and cuneiform remedies. In prayers and incantations, ancient readers made frequent appeals to Ea, the deity of wisdom and water, and Gula, the goddess of healing.

In ancient India finding harmony and balance in one's health is the main goal of this ancient discipline, which has roots that date back more than 5,000 years and are mostly Asian. The core ideas of Ayurveda continue to have a significant influence on modern medicine despite its significant philosophical development. Its approaches, some of which undoubtedly deviate from contemporary tactics, have a distinct historical background. This is significant because the development of wellness paradigms only seldom incorporates such fundamental ideas. However, there are a plethora of difficulties in implementing these ideas. Despite all of these complications, the applicability of these ideas is strikingly evident in the current discourse. Ayurveda emphasizes (and this is a fundamental distinction) a holistic connotation of health per individual, in contrast to many current treatments that emphasize the significance of specialty. It explains the need for equilibrium among the three doshas. The balance between the three doshas—vata (air and ether), pitta (fire and water), and kapha (water and earth)—is necessary for good health, but it only needs to be highlighted since it has such a significant influence on our wellbeing. Although this viewpoint may be contested by some, Ayurvedic concepts, at least in antiquity, influenced many aspects of modern health and practice. This discipline encompasses emotional and spiritual wellness in addition to physical health, although most people are unaware of its holistic approach. Ayurvedic writings, particularly Charaka Samhita and Sushruta Samhita, contain extensive insights about anatomy, surgical techniques, and medicinal use. Sushruta, sometimes referred to as the "Father of Surgery," described more than 300 surgical techniques, including cataract extraction and rhinoplasty (reconstruction surgery for noses), though many people draw inspiration from a number of ancient physicians in the discipline. Ayurveda is an all-encompassing practice that strives for inner equilibrium (the self) in addition to highlighting and possibly elevating the very essence of employing diet, minerals, and herbs to treat illnesses and promote long life. The concepts are in perfect harmony with contemporary health paradigms, even if they represent timeless wisdom. The intricate relationship between human well-being and the gifts of nature is crucial because it serves as a reminder of our own health, which we frequently overlook. Furthermore, it is important to take into account an integrated viewpoint in which every component is a part of a single, intricate fabric that is hand-sewn by people who dedicate their time and compassion to understanding that there is no distinction between any two. Even Puritans would concede that ideas like detox and yoga are still profound, but evaluating the expression of ancient wisdom in Oprah-slash-Gwyneth health jargon is best left to a higher power. These ideas have been around for centuries, yet because of their all-encompassing approaches to health, they are still used today. There are several underlying issues with using these, but their ongoing relevance is a sign of their efficacy and adaptability.

Indigenous cultures all over the world have healing systems ingrained in their surroundings and spiritual beliefs. These cultures have been able to use techniques that are specific to them for tens of thousands of years, despite the fact that those of us who think of ourselves as representing modern society frequently ignore this. Indigenous African, American (North and South), and Oceanic traditions that support a long-term, peaceful healing process. Shamans, like the healers of Native Americans, Africans, and Amazonians, employed regional herbs, rituals, and spiritual practices to treat a variety of illnesses, though their effectiveness has been questioned. As a 360-degree perspective on health arises, the nature-spirituality blend continues to be one of the earliest aspects of healing arts, despite the deeply ingrained traditions.

This intricate network of healer, patient, and universe represents a complex web of wisdom that extends much beyond the field of medicine. In the mind-boggling wilderness and often misdirected regions of Africa, a definitely customary mainland with an undeniable globe life span, covering customary authorities over the long haul, has employed homeopathic treatment systems to the trees carefully zapped in centuries gong medicine that expels various viruses from its immunizer types "regular techniques" for coming up with responses for physical-western clinical paternalism. Some valuable medications, such as the anti-malarial chemical artemisinin from the Chinese plant *Artemisia annua*, have been uncovered thru the roots of human knowledge of medicinal plants. Contrary to popular belief, there are also healers in Latin America known as curanderos who treat illnesses by combining herbal remedies with prayer and spiritual cleansing. Indigenous knowledge systems, such as those found deep inside the Amazon rainforest, have a variety of medications that are just waiting to be discovered; some plants may not even have been examined yet. However, they may possess remarkable therapeutic qualities since this untapped natural resource—which is frequently disregarded—carries the essence of upcoming therapeutic approaches.

Cultural beliefs and values are shaped by a specific culture's religious and spiritual dimensions, which has an enormous impact on local medicine and their ability to respond to their placebos. Bhuiyan communities have always relied on nature. They have committed to preventing illness using natural ingredients, with a certain level of success. In addition to the leaves or roots of plants, Bhuiyan also uses body parts of several birds, fish, reptiles, animals and insects, which are not commonly utilised as medicines, for healing in Bhuiyan life. Every medicine follows a set of guidelines, and their traditional knowledge determines its dosage and timing. Despite using natural remedies for all ailments, their faith plays the greatest role in their ability to recover.

The use of each ingredient is different according to the disease. Since using this natural element to cure illnesses has been done for many centuries, many generations have been cured, and they have great faith in the natural way of treatment. More precisely, when someone thinks that taking this medication will make him better, this belief system influences a person's psychology, which affects that person's ability to recover.

The placebo effect is where a person's Beliefs trigger how a person perceives an illness and treatments. For medical research, taking the placebo effect with it is important, especially when it's exploring a sphere of traditional knowledge such as Ethnomedicine.

Bhuiyas have always relied on the jungle for their medical needs, but since they are adept at bringing it, there is a medicine specialist in the community who is typically more versed about this issue. When he suggests medication, he and the patients both follow certain guidelines. Sometimes, the rules for bringing this medicine include bringing it early in the morning, around sunrise or after sunset. The traditional healer advises the patient not to eat any non-veg food while taking any medicine and on which particular days he should take that medicine. Traditional knowledge is a reflection of the norms and values that have been passed down through the generations in every culture.

Anthropology's biocultural approach identifies the connections between biology and culture. A connection between culture, biology, and health is examined via the biocultural approach. It relies on the effects of our surroundings and the relationships between sociocultural and biological adaptations. To fully understand how culture affects health, the biocultural approach by using ethnographic data.

They live very close to nature, and the environments have a big impact on their culture and health. Specifically, ethnomedicinal plants, animals, and insects are available in their nearest forest. Bhuiyas are cured through using this knowledge from generation to generation. They have very in-depth knowledge

of when and where the specific plants are available in the form of the particular season and which parts should be used for particular diseases. Here, nature's proximity and dependency play a key role in the health of the Bhuiyan community.

Methodology

This paper attempts to examine the dependence of *Paudi Bhuiyan* communities on ethno-medicinal practices for the treatment of different health issues including processes of preparing and medication. Moreover, it makes an attempt to document the traditional knowledge before complete extinction due to environmental degradation, modernisation, access to allopathic and institutionalise health care practices and bi-piracy. The older generations primarily emphasis on traditional health remedies acquired from the predecessor, while, younger individuals put forth confidence on modern health care system and are less inclined to learn or practice. Therefore, for transmission of this knowledge is halt that largely oral. How the knowledge system is integrated with the socio-cultural practices is another aspect of this study to comprehend by integrating individual health care practice with broader community perspectives. It investigates the traditional knowledge systems involved in healthcare practices i.e. sustainable collection of flora species, preparation and pattern of consumption. The fieldwork was undertaken in the *Paudi Bhuiyan* villages Debichuan, Pacheripani, Baldhi, Kadeldhi, Mahuldiha, Burabhuin, Rugrakudor, Saronkot, and Koladu in Deogarh district and Kulposi and Dhukamunda in Sundargarh. districts of Odisha during 2022 and late October 2024. All these villages are homogenous by nature that constitute the *Paudi Bhuiyan* community. The village Debichua is situated approximately five kilometers from the national high-way-53. The nearby villages, Jharabahal and Netrabahal are predominantly inhabited by the Chasa community. Bamparda is the closest weekly *hata* (market) to Debichuan, held every Saturday, while *Kala hata*, a larger market located six kilometers from Bamparda, is held on Tuesdays. Villages such as Pacheripani, Saida, Koladu, and Rugrakudor are closest to *Kala hata*.

Data was collected using unstructured interview schedules, both participant and non-participant observation, focussed group discussion and case study. Unstructured interviews were conducted among the householder members, younger generation and *Paudi Bhuiyan* traditional healers. The use of unstructured interviews offered a profound and more nuanced understanding of the cultural, spiritual, ecological and economic dimensions of traditional healing practices. Focus group discussions with elder members of community, younger generation and women were also conducted to documents the prevalence of traditional medication and its acceptance among the community members. Both participant and non-participant observation enabled first-hand insights into the importance of ritual practices, and beliefs that might not be fully delivered through interviews with the different stakeholders. Moreover, case studies offered in-depth and contextualized examinations of specific healing practices for different diseases. The use of photographic, video, and audio documentation allowed for a rich visual and auditory record, capturing the complexity and significance of these practices in ways that written descriptions alone cannot fully express.

Findings and Discussion

The personal interactions with the *Paudi Bhuiyan* people reveal that the concept of health a disease among them is different bio-medical perspectives. It is embedded with socio-religious belief system that perceives as a temporary consequence wreaked by supernatural forces and ancestral spirit due the misconduct of individual or community member. Therefore, healing practices among the *Paudi Bhuiyan* is not only a

curative measure but serve a redeeming act to alleviate the consequences of immoral act also. The *Paudi Bhuiyan* community of sample area adopts two distinct healing practices; ritualistic and herbal healing. The ritualistic practice involves prayer with uttering hymn to ancestor and supernatural forces with profound consecration. However, herbal healing involves on using plant resources. The present study deals the herbal healing practices. The following table indicates about 40 different plant species those used among the sample population group. Different parts such as bark, leave, root, fruit and flower are employed in many forms- raw, cooked or ointment- depending on the ailment among them. The processing of medication is made typically on indigenous method as juice, paste and ointment.

Figure: 1

Sl. No.	Botanical Name	Family/ Local Name	Habit/Habitat/ Ecological Status	Ailments/ Diseases	Parts Used/ Mode of Preparation	Dosage/ Timing
1	<i>Semecarpus anacardium</i>	Anacardiaceae/ valia	Tree/ wild	To treat severe laceration	Fruit/ Roasted fruit over a flame, juice extracted and applied to the cut	1 time/ Day
2	<i>Calotropis gigantea</i>	Apocynaceae / oroto	Plant/ wild	Scorpion bite healing, tooth worms cure	Milky latex/ Tear the scorpion bite area; insert the milky sap into the wound	1 time/ Day
3	<i>Populus tremula L.</i>	Salicaceae/ rohoni	Tree/ wild	Stomach pain cure	Bark/ bark is pasted well with water, and juice is extracted for dosage	1 tablespoon/ 2 times a day
4	<i>Pisonia grandis</i>	Nyctaginaceae/ kurni	Plant/Wild	To get rid of worms	Fruit seed/ Fruit seed paste is applied on baby's buttock	Half teaspoon/ 1 time a day
5	<i>Coprosma robusta</i>	Rubiaceae/ mendhaguni	Plant/ wild	Tooth worms cure	Root bark paste/ Apply the resulting paste together with its juice straight on the affected part of the tooth after grinding the root's outer skin	Pea-sized amounts used/ 1 time a day
6	<i>Cleisostoma paniculatum</i>	Orchidaceae/ omri	Plant/ wild	Ear pain relief	Leaf juice /	2 drops/3 times

					Leaf will be flamed over a fire, juice extracted, it will be applied to the painful spot of the ear, and the leaf itself will be tucked inside.	in a Day
7	<i>Phoenix dactylifera</i>	Arecaceae/ jongli kojuro	Tree/ wild	Burning sensation during urination and dysentery with phlegm	Spadix stems/ stem is chewed; its juicy pulp placed over the novel	One or half stem/day
8	<i>Cuscuta reflexa</i>	Convolvulaceae/ bonpui	Plant/ wild	To cure tuberculosis, vomiting, blood in dysentery	The whole creeping part/creeping part of this plant, where juice is extracted and mixed with red sandalwood, is taken as medicine	3 tablespoons/ 3 times a day for adults
9	<i>leonotis nepetifolia (l.) r.br.</i>	Lamiaceae/ valponea	Plant/ wild	Burning area relief	Flower/ flower-burning ashes are used as a paste in the affected part	Whole burned area/ 1 time application for whole day
10	<i>Celastrus orbiculatus</i>	Celastraceae/ pengu	Plant/ wild	Joint pain relief	Fruit/after boiling, this fruit oil is extracted and applied to the affected area	Area of pain/ one time a day
11	<i>Solanum paniculatum</i>	Nightshade/ Kontua	Plant/ home garden	Cold cough, body pain relief	Whole Fruit/ after Burning the fruit; it's eaten to cure	4 to 5 fruits at a time / one time a day
12	<i>Symphoricarpos oreophilus</i>	Caprifoliaceae/ benduli	Plant/ wild	Cure Jaundice	Root/	2-3 tablespoons/

					Root paste water is taken as medicine	2 times a day for adults
13	<i>Meiogyne pannosa</i>	Annonaceae/ Juichemda	Tree/ wild	To cure laceration	Bark/ Tree bark is thoroughly ground into a paste and it's tied over the cut area using a piece of cloth	According to the affected area/ it's tied with cloth until recovery
14	<i>Flemingia strobilifera</i>	Fabaceae/ Eknariya	Plant/ wild	Hydrocele	Root/root is pasted with water, then mixed with Wood apple(balguri) fruit eaten	5 spoons/ for adults 3 times a day 1.5 spoons / for small children 3 times a day
15	<i>Calotropis gigantea</i>	Apocynaceae/ oroto	Plant/ wild	Hydrocele	Root/root paste mixed with pure clarified organic butter of cow applied to the affected area, After that, heat the leaf given to the affected area	2 to 3 days/ Morning, afternoon, and evening time, preferably 2 Sundays (Day specific)
16	<i>Cucurbita</i>	Cucurbitaceae/ patal kokharu	Plant/ home garden	Hydrocele	Vegetable/ to cure, boiled vegetable steam is used to the affected area to cure	2 to 3 days/ Morning, afternoon, and evening time, preferably 2 Sundays
17	<i>Mangifera indica</i>	Anacardiaceae/ ambo gocho	Tree/ home and garden forest	Jaundice	Bark of the base of the tree / bark paste water is taken as medicine to cure	1 tablespoon / 3 times a day

					(Peeling must be from bottom to top in reverse order)	until recovery
18	<i>Woodfordia fruticosa</i>	Lythraceae/ dhating	Shrub/ terrestrial	Snakebite	Root/chewing the root and juice is consumed as medicine	After chewing, a small portion of the root juice will be consumed, and the remaining will be applied to the affected area / It is used one time if needed, and then it will be repeated further
19	<i>Pavetta tomentosa Roxb</i>	Rubiaceae/ kurae	Plant/ wild	snakebite	Root/ Root paste water is used to cure	1-2 spoon/one time
20	<i>cymbopogon martini</i>	Graminae/ dhomntri	Grass/ wild	Digestion problem	Leaf/leaf paste mixed with water white rock salt and consumed	1 spoon / one time on an empty stomach
21	<i>Hibiscus rosasinensis</i>	Malvaceae/ mondar	Plant/ domestic	Menstruation is not on date	Root/root paste mixed with cold water and consumed	Half glass/ 3 days evening time (one day after another)
22	<i>Ricinus communis(red)</i>	Euphobiscaeae/ lali joda	Plant/ wild	Weight loss	Root juice/	5- 6 spoons/

					Root paste mixed with water and black sesame oil consumed	morning time empty stomach only
23	<i>Achyranthes aspera</i>	Amaranthaceae/ apamarong	Plant/ wild	Labour pain cure	Root/root paste water sprinkled on the lower body part	At the time of labour pain, root paste water sprinkled reduces the labour pain till it's done
24	<i>Phoenix dactylifera</i>	Arecaceae/ Kotak	Plant/ wild	Eyesight weakness	Fruit/fruit paste mixed with organic camphor and honey, then it's applied	A small amount/ Paste is applied on the lower slash line two times a day
25	<i>Mangifera indica</i>	Anacardiaceae/ ambo	Tree/ home garden	Vomiting cure	Leaf petiole/ Paste mixed with ginger and salt, then it's consumed	1 spoon/7 leaf petiole mixed with ginger and salt paste is given one time a day only
26	<i>Musa paradisiaca linn</i>	Musaceae/ kodoli	Tree/ home garden	Hot stomach	Stem/stem paste juice consumed	5 spoons/ one-time empty stomach
27	<i>Annona squamosa</i>	Annonaceae/ ato	Tree/ home garden	Pain relief	Leaf/leaf paste applied to the affected area	According to the pain area/ leaf paste applied one

						time a day
28		/okatbindu	Plant/ wild	cancer	Root/ root paste mixed with rice water and consumed	1 to 2 spoons/ and one time a day
29	<i>Buchanania lanzan</i>	Annonaceae / Char	Plant/ wild	cancer	Leaf/ leaf paste is applied to the affected part	According to the affected area/ leaf paste was applied/ 2 times a day
30	<i>Diospyros maritima</i>	Ebenaceae/ dimri	Plant/ wild	Increased body heat	Root/ After cutting the root of the tree, a container should be placed under it from where the juice would be collected overnight and the next morning, the juice would be collected and consumed as juice	2 spoons/ on an empty stomach. 6 to 7 days
31	<i>bauhinia vahlii</i>	Legumes/ siali	Plant/ wild	worms	Fruit seed/fruit paste mixed with water and consumed	1 spoon/ paste mixed with water in the evening time only
32	<i>Desmodium triflorum</i>	Legumes/ ghaso	Herb/ wild	Bone fracture	Root/ root paste juice is consumed with puffed rice	1 spoon/ 3 times a day for 3 days;
33	<i>Babiana angustifolia</i>	Iridaceae/ mosan kenda	Plant/ wild	Infection cure	Root/Root paste applied on the affected area	Small amount according to

						affected area/2 times a day
34	<i>Cheliocostus speciosus</i>	Costaceae/ keu	Plant/ wild	headache	Root potato/ root potato paste mixed with mango(<i>Mangifera indica</i>) tree bark and applied to the forehead	Paste applied on forehead 1 time a day
35	<i>Justicia pectoralis</i> And <i>elephantopus scaber</i>	Acanthaceae / daisy/ sostroveji	Plant/ wild	The loose motion of the newborn baby	Root/ Root paste water mixed with peacock feather ash and consumed	Half spoon / one time a day
36	<i>Curculigo orchioides</i>	Hypoxidaceae/ niharica	Plant/ wild	Cut area cure	Root potato/root potato paste applied to the affected area	A small amount/ once a day
37	<i>Borassus flabellifer</i>	Arecaceae/ talo	Tree/ forest and open area	Teeth pain	Root/ root paste is applied on the affected area	According to the affected area/ once a day, preferably in the evening.
38	<i>Hoheria glabrata</i>	Malvaceae/ valujokha	Plant/ wild	Bear bite cure	Root/root paste applied on the affected area	According to the affected area/ paste is applied on the affected area two times a day, preferably day and evening

39	<i>Vitex negundo</i>	verbenaceae/ beguna	Plant/ wild	arthritis	Leaf/ beguna leaf paste mixed with and milkweeds Root (<i>Calotropis procera</i>) within that an Insect (<i>aphodius pedellus</i>) fried mustard oil is added	Oil is applied on the body part and massaged gently. preferably evening time used
40	<i>Shorea robusta</i>	Dipterocarpaceae/ shalo	Tree/ wild	Cold cough	Gum/mixed with castor oil, paste is applied on the jugular notch area	A small amount needs to be applied on the affected area/ once a day

Source: Fieldwork

Long-term staying with the *Paudi Bhuiyan* people in the sample area provided an opportunity to understand their traditional medicinal practices. Generations of living closely in the vicinity and its natural environment, the sample population group have developed a rich sense of knowledge on local flora and fauna that enables them to easy identification and process of collection of medicinal plants without spending much time, substantial effort or financial resources. These practices are based on sustainable management of resources and self-reliant health care system that embedded with socio-cultural practices and complete awareness of surrounding. The following case studies disseminate the hand on collection and use of plant resource for medication among the sample population.

Case-1



The *rasi* (Til) oil is widely used among the Paudi Bhuiyan for caring of newborn. A woman of the community stated about multiple traditional health benefits of *rasi* oil (*Sesamum indicum*) when she delivering a massaging to a newborn. The gently touch of palm by applying *rasi* oil of mother or aged women of family or community over the soft body of newborn is believed to promote baby's growth and development. She further expressed that smooth massage over the body at early morning beneath reddish sunlight makes the child relax after lying overnight in a cot. Moreover, it is believed that massaging a newborn with *rasi* oil strengthen the bones and joints. The gentle massaging around the naval cord reduces the chances of easy infection and massaging the baby's belly button area is expected to increase digestion and reduce uneasiness such as gas or colic. She used *rasi* oil as a natural mouthwash for newborns to support oral hygiene right from the early days.

Case-2



A woman of village *Pachuripani* had been suffering from a cold and cough for three days. She was feeling severe throat pain during swallowing food. In order to get relief from the pain she adopted a traditional home remedy. She brought *Sal* (*Shorea robusta*) resin, grinded it into a powder in a traditional method and

mixed it with castor oil (*Recinus communis*) to make a paste. She applied this paste externally on her throat and gave a warm, soothing sensation on it with a cloth. she continued this remedy for 2 to 3 days, and gradually got substantial relief from the throat pain.

Case-3



An unmarried girl of village *Pachuripani* shared that she had been feeling very uneasy approximately five weeks ago. As a result, she fell down and was taken to the nearby community health centre. She was admitted there for three days. After three days the doctor prescribed medication and advised her to take rest at home. After being discharged, she returned to her home. However, she still did not feel completely well. Therefore, she consulted through her elder brother a traditional healer in the community at nearby village, *Rugudakudar* for seeking complete relief. The traditional healer after diagnosing her recommended a root called *Benjati* (*Lawsonia inermis*) in local parlance, which is available in their surroundings. Here elder brother collected the roots of *Benjati* from nearby forest and her mother prepared a paste out of those roots. At the early morning in empty stomach she consumed half a bowl of water mixing with the root paste. The traditional healer also advised her not to have spicy and non-vegetarian food during the course of medication. Gradually she became cured.

The Paudi Bhuiyan people of sample area possess deep ecological knowledge and its sustainability. Therefore, they emphasise to adopt traditional eco-friendly method to harvest, with maximum medicinal efficacy and optimal utilization of plant resources. The utilitarian behaviour of Paudi Bhuiyan people is concerned with the principles of sustainability that include rotational harvesting and seasonal gathering. Moreover, the collection is confined on specific part of the plant based upon need without hampering to other part in need based. The other parts are left unharvested that allows natural regeneration. It has been also observed that preferably the older plants are selected for collection. These practices promote a healthy management of ecosystem for long-term period. The utilitarian behaviour of Paudi Bhuiyan people is reciprocal by nature. The people utilise the natural resources in need based and shoulder the responsibility of taking care of it in a respectful relationship. Furthermore, indigenous land management techniques such as terrace cultivation of Paudi Bhuiyan contribute significantly to the preservation of biodiversity that is essential for the survival of medicinal flora species. In a focus group discussion, the participants emphasised on the seasonal collection. And exclusive dependency on the plant resources for certain

ailments such as fever, loose motion, body pain, and headache. The widely used plants are *Sostroveji*, *Gutkhorika*, *Vui Limbo*, *Oroto*, *Valujhokha*, *Beguna*, *Benduli*, *Kontua*, *Khopkhand*, and *Mojhurjhuri*. Mostly the older generation are well aware on the medicinal values of plant resources and their applications for different ailments. They also quite satisfy with their traditional life style and healing practices. expressed a deep sense of satisfaction with their traditional way of life and healing practices. The participants emphasized the traditional healing practices that led to the generations of survival in that surrounding happily and healthy without relying heavily on modern medicine. Therefore, it is their responsibility to take care of those natural resources.



The healing practices of Paudi Bhuiyan are inherently holistic by nature that address physical aspect of illness embedded with emotional, spiritual, and religious dimensions of relationship. The healing is also viewed as an occurrence that restores relationship between the human world, spirit world and the natural world. The medication system of sample population incorporates the use of plant-based remedies with rituals, songs, prayers, and communal participation alongside. This practice of ailments reflects a deep interrelation between cultural faces and healing practice. The collection of medicinal plants is not merely a utilitarian behaviour of Paudi Bhuiyan but is preceded by many socio-cultural practices those include prayers, or offerings, even sacrifice to honour the spirit of the plant and maintain harmony with the natural world. These practices reinforce a deep-rooted gratitude to the nature and natural resources with mutual responsibility that are essential to both healing and environmental stewardship. Moreover, the Paudi Bhuiyan of sample adopts a traditional method for alleviation of body pain. They apply a thick layer of ash on the body part having pain. An iron object is heated and used to mark on the affected spot. The people belief that heated iron scar acts as pain reliver, when it is applied on that particular vein point. In case of stomach pain the heated iron- mark is placed at the naval area. However, four such mark of heated iron is made around the naval point in case of severe pain. This practice reflects the community's indigenous knowledge of pain management and body healing.

At present the appearance of pharmaceutical companies including the local *Baidyas* have been observed in this sample region to extract the plant resources for profit making—often without taking the consent of Paudi Bhuiyan People. This practice literally stated as biopiracy and historical that undermine the rights and knowledge systems of local people. The growing global advocacy of Free, Prior, and Informed Consent (FPIC) and Access and Benefit Sharing (ABS) as outlined in the Nagoya Protocol fail to Indigenous knowledge, of ensuring fair compensation, and promoting meaningful collaboration of local people with the external agencies. Moreover, the impacts of industrialization, urbanization, and environmental degradation have further pauperised the plant resources that threatened the sustenance of

traditional knowledge, which is often transmitted orally through generations. As a result, elders and aged knowledge holders not able to transmit the knowledge in practice to the younger generation that led to gradual decline of these cultural and ecological heritages. Focus group discussion was conducted among the youth of *Devichuan* village who stated unfathomable concern on declining of traditional medication knowledge among the younger generation. They expressed that the younger generation raise drawn to other livelihood opportunities in urban centre and many of them are migrating to Gujrat, Hyderabad and Tamilnadu. This young mass rarely a come to the village and preoccupied with mobile when they are in the village. According to the participants of discussion, the youth show little interest in interacting with older or in acquiring traditional knowledge. The youth are no longer familiar in identifying the plant resources or its process of collection and application as well. Therefore, they prefer to visit nearby health centre for any health problem, rather than adopting traditional health care mechanism. Though, few participants are familiar with some common name of medicinal plant such as castor oil, *Gutkhorika*, *Vui Limbo*, *Sostroveji*, and *Oroto* but their understanding is limited with few.

This medication practice among the Paudi Bhuiyan reflects Frazer's concept of *sympathetic magic*, wherein symbolic connections between elements of nature guide healing practices. Among the Paudi Bhuiyan of sample area, the plants, animals, and humans are not seen in isolation but as interconnected components of a larger habitation. In this holistic view, each plant represents not only itself but also its species and the ecosystem it inhabits. Health and illness are thus viewed as temporary imbalances within these interconnections. This practice of sample people disseminates a broader understanding of how man and nature are equally interrelated—one in which the mystical and the ecological are deeply embedded. The Paudi Bhuiyan community's insights urge us to consider how belief systems, ritual practices, and ecological knowledge together shape a sustainable and respectful engagement with the environment.

Morwyn (2001) supports this notion by emphasizing the energetic qualities of plants and their potential to facilitate healing and transformation. Ingesting a plant—whether for nourishment or medicinal purposes—is seen as a way to absorb and harness its intrinsic energy. Among the sample population, healing involves recognising how specific plants resonate with different aspects of a person's being—physically, emotionally, and spiritually. This holistic approach reinforces the idea that everything is connected and that the energies of plants can activate or support natural healing processes. By honouring these interconnections, the Paudi Bhuiyan develop a deeper appreciation for the role of plants in both personal well-being and the health of the broader ecosystem. This worldview not only enriches our understanding of indigenous wisdom but also encourages a more mindful, grateful, and sustainable relationship with the natural world

Concluding remarks

Ethnomedicine is an essential pillar for the social, cultural, and spiritual lives of Paudi Bhuiyan. It ensures that their communities have a healthcare system that aligns with their values and traditions, promotes social cohesion, and supports spiritual and ecological well-being. It's not just a form of medical practice but an embodiment of their cultural heritage and identity. The entirety of knowledge, abilities, and practices in traditional medicine are derived from theories, beliefs, and experiences. However, migration led to a loss of interest in traditional knowledge, and the modern oral transmission of this knowledge from the ancestors is increasingly diminishing due to the lack of a written script. The younger generation accepts modern medical treatment in addition to using ethnomedical methods. They thought that only modern medical care could heal illnesses, but it could be taken with taking traditional processes. However, if a

person is afflicted by magic or negative energy that modern medicine cannot treat, traditional medicine can still treat them. In this case, the patient will receive a proper diagnosis and treatment very quickly. The study's summary, which emphasizes the necessity of protecting and using these natural resources, indicates that the Paudi Bhuyan continue to hold knowledge about therapeutic plant species and organic usages like insects, animals, and reptiles.

Acknowledgement: I spent around a year in Bhuiyan villages during my fieldwork. In those days, they taught me to live in harmony with their lives, with simplicity and great skills. The contribution of every person in the village during my stay there is undeniable. They involve with me very deeply and sometimes directly and indirectly. Simply thanking them would be an understatement; I am extremely grateful to them for accepting me as one of their own and making me a part of their life. It is a great joy that I can also introduce myself as one of their kin (rituals through soi bosa)

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