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Existential Crisis of Ethnomedicine among Santals of West Bengal, India

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Abstract:

Ethnomedicine, rooted in traditional healing practices, explores the bio-active properties of plants and animals, particularly among ethnic communities with limited exposure to Western medicine. This study investigates practice of ethnomedicine among the Santal people, an indigenous group in South Asia, with a focus on healing patterns and intergenerational transmission of knowledge orally. The study aims at exploring present healing practices among the Santals, emphasizing use of ethnomedicine, understanding any obstacle that prevails in transmitting indigenous knowledge across generations. Data was collected through Focus Group Discussion (FGD) and in-depth face to face interviews. Interview was carried out among the Santal individuals who were above 15 years of age and were residing in Puinam village in West Bengal. Social and demographic details were gathered through semi-structured schedules. Qualitative data were analyzed by means of interpretation and through narrative analysis. Santals living in the Puinan village predominantly rely on 37 types of plant-based and 6 types of animal-based medicines, where 48.9% of medicines are applied to people of all age groups. The villagers mentioned that oral tradition is the primary mode transmission of knowledge. They also use modern medication. Modernization, loss of biodiversity, and easy accessibility to modern healthcare pose challenges to the indigenous medical practices. Despite shifting preferences towards allopathic treatments, ethnomedicine persists among the Santals. This reflects the enduring significance of traditional healing knowledge. The study reveals an existential problem of ethnomedicine in future. This requires further research on both plant and animal based medicine and on the barriers to knowledge transmission within the Santal community.

Key words: *Ethnomedicine, santal, plant, transmission, indigenous knowledge*

Introduction

Ethnomedicine refers to traditional medicinal practices. Diverse ethnic communities, especially

those with limited exposure to Western medical treatments, take advantage of the bio active properties of plants and animals for treatment of diseases (Acharya and Shrivastava, 2008). “Ethnomedicine” is a term, often used interchangeably with “traditional medicine” (Acharya and Shrivastava, 2008). Ethnomedicine has a rich historical background, with its roots going back to the early 19th century to John W. Harshberger, who first introduced the academic study of medicinal plants in 1895 (Ghosh and Guha, 2021). This field later flourished with its magnificence and the perspectives of Ethnomedicine is glorified as a specialized area of Medical Anthropology (Ghosh and Guha, 2021). Lieban defines Ethnomedicine as, ‘*A diverse subject that includes magico-religious, ethnobotany, medical and chemical procedure*’ (Lieban, 1973). World Health Organization (WHO) mentioned that, around 80% of the global residents rigorously selected the local and traditional medicines for their regular healing practice (Bhuyan, 2015; Azaizeh et al., 2003). Traditional medicines play a significant role in the healthcare practices of various communities worldwide, including tribes in both developing and developed countries (WHO, 2023). Derived predominantly from plant sources, these traditional remedies have persisted alongside modern medicine. Research findings indicate that approximately 85% of primary healthcare traditional medicines worldwide are derived from plants (Yadav et al. 2005). India boasts a diverse range of medicinal plant utilization, as documented in various studies. In India, the practice of utilizing plants for medicinal purposes has ancient roots, dating back to the Rig Vedic period spanning from 3500 to 1800 BCE. During this time, humans learned about the use of medicinal plants by observing animals (Raghunathan, 1987). For instance, the Rig Veda mentions around 99 medicinal plants, the Yajurveda lists 82, and the Atharvaveda includes 28 plants used for treatment of various ailments (Bodding, 1925). Moreover, at the national level, numerous researchers and scientists have conducted various documentation on ethno-medicinal plants. Globally, over 35,000 plant species are currently utilized for their medicinal properties (Van Seters, 1997). Today, there is a resurgence of interest in tribal medicines and their potentials in treating severe diseases such as cancer, AIDS, hepatitis, rheumatoid arthritis, and neurological conditions along with countless limitations (Basak et al, 2016). This resurgence underscores the economic importance of traditional medicine and the ongoing efforts to harness its therapeutic potential in addressing complex health challenges.

Ethnomedicine among the Santals

“*Ethnomedicine is more ethnic, more magical and less scientific*” (Erickson, 2007). In this post-modern era, indigenous people are still cherishing their traditional healthcare procedures, which are purely based on the cultural beliefs and interpretation of diseases and illness. Santals, an ethnic group with ancient roots in South Asia, historically lived in remote jungles in the

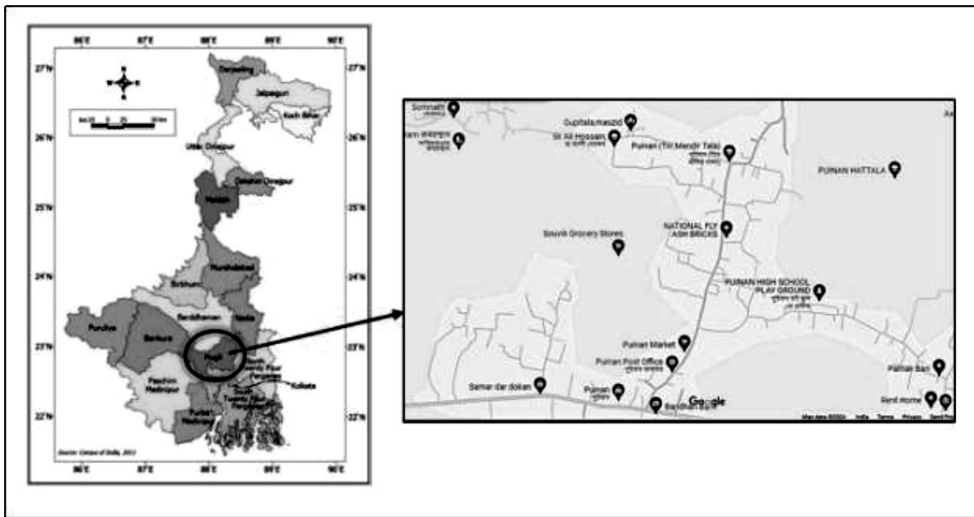
midst of challenging natural conditions governed by the unpredictable forces of sun, rain, and wind (Kaura, 2015). They faced constant threats from wild animals and birds, which propelled them towards a superstitious and highly ritualistic way of life (Kaura, 2015). Revering nature, they relied on unseen powers and forces that guided their existence. Disease and ghosts were significant fears for them. Illness often attributed to evil spirits, reflecting their primitive beliefs and worldview (Kaura, 2015). Thousands of indigenous people are primarily dependent on the herbal plants and some faunal resources for therapeutic practices. Santal is one of the Austro-asiatic speaking indigenous communities who believed on ethno-medicinal practices in their daily life (Hembrom, 1996). Application of Ethnomedicines among Santals in different districts of Odisha has revealed an entire procedure of treatment for numerous diseases like bone fracture, ghost attack etc (SCSTRTI Report, 2017). Oral transmission is the only way to convey their knowledge. In course of time and due to cultural dynamics this rich tradition has faded away silently. W. H. R. Rivers (1924) highlighted that, traditional knowledge of disease and healing practices were mostly unscientific to the Western medical procedures. However, indigenous understanding is demonstrated in terms of cultural belief system (Rivers, 1924; Lal and Neeraj, 2019). Being an indigenous people, Ethnomedicine became their second choice, because of uncountable benefits of Allopathic and Homeopathic treatment and of its easy and pocket-friendly accessibility (Tripathi, 2019).

The utilization of Ethnomedicine among indigenous communities offers valuable insights into traditional healing practices and the transmission of ancestral knowledge across generations. This study mainly focuses on investigating the present healing patterns among the Santal people, with a particular emphasis on the usage of Ethnomedicine and the way of inter-generational transmission of indigenous healing knowledge.

Objectives of the study

- Explore the present healing pattern among the Santals, with special emphasis on use of ethnomedicine.
- Understand obstacles in the way of transmission of indigenous knowledge about ethnomedicine of the studied people across generations.

Area and the people



Map-1: Puinan Village

(Source: <https://www.google.com/maps/@22.9439571,88.2151659,15.92z?entry=ttu>)

The study has been carried out among the Santals living in Puinan village, located in Latitude 22.9398452°N and Longitude 88.2112543°E of Polba-Dadpur Block in Hooghly District of West Bengal. Puinan is one of the out sized multi-ethnic villages in this block with 4449 individuals, as mentioned in census 2011 (Census India, 2011). In Dadpur Panchayet of Puinan village, out of 977 households, 43 belonged to Santals.

Total 193 Santals people lived in Puinan village, irrespective of genders. Hansda (15.51%), Soren (13.21%), Tudu (30.45%) and Murmu (40.83%) are the predominant clans of Santals in this village. Demographic profile shows that majority (55.18%) were female and 44.82% were male members in the Puinan village. Maximum number of the participants (25.86%) were adults. They belonged in the age groups of 48 to 58 years. 9.7% of the people belonged to the the group of above 58 years of age. Moderate number of individuals that is 24.13% and 24.71% belonged in 15 to 25 years and 37 to 47 years age groups respectively. This village has a poor educational status. Most of the respondents (58.62%) have only Primary education, 17.8% had completed Higher Secondary and only 2 women are graduates. Elderly persons are mostly non-literate. In terms of marital status 24.13% are unmarried, 49.42% are married, and 15.51% are separated. High propensity of child marriage is found among the persons, who were above 50 years of age irrespective of genders. This study covered information from two generations. All of the villagers

including both male and female were solely agrarian labors. A few people were engaged in some cottage industry, which were their secondary occupation.

Table – 1 Social and demographic profile of the Santal people of the village

Variables	Types	Number	Percentage (%)
Sex	Male	78	44.82
	Female	96	55.18
Age groups (in years)	15 – 25	42	24.13
	26 – 36	27	15.51
	37 – 47	43	24.71
	48 – 58	45	25.86
	59 and above	17	9.7
Education	Non-literate	16	9.2
	Primary education	102	58.62
	Secondary	23	13.21
	Higher secondary	31	17.8
	Graduation	02	1.16
Marital status	Unmarried	42	24.13
	Married	86	49.42
	Separated	27	15.51
	Widow/ widower	19	10.91

Intensive fieldwork of eight days was conducted in November, 2023 to explore the present state of ethnomedicine. Data was collected through Focus Group Discussion (FGD) method to trace a group oriented notion of use of ethnomedicine among the Santals of Puinan. To get the social and demographic details of the population, structured schedule was used and intensive interviews were conducted to understand the present healing procedures, irrespective of gender as well as generations. To obtain an implicit knowledge of Ethnomedicine as traditional healing procedure and its regular usage in their livelihood pattern, data was collected from the Santal, who were above 15 years of age. As a consequence, 19 children were not incorporated in this study and responses of 174 participants (78 male and 96 female) were interviewed for understanding their regular healing practice. Qualitative data was collected by means of verbatim manner and

analyzed through interpretative method.

Glimpse of ethno-medicinal practice among the contemporary Santal people

Santal is the third largest indigenous community (Bisai et al., 2014). They are mainly distributed in States like Assam, Odisha, West Bengal, Bihar, Jharkhand and Chhattisgarh in India. Use of ethno-medicine among Santals has regularly been documented at various countries, namely, ethno-medicinal use of Soren clan of the Santals from Bangladesh (Rahamatullah et al., 2012).

In West Bengal, a number of ethno-medicinal researches were carried out. Some of these are, among the Santals of Alipurduar (Mondal et al., 2020), Bankura (Rahaman and Karmakar, 2015), Medinipur (Kisku, 2023) and South 24 Pargana (Ghosh and Guha, 2021). It is found that impact of geo-physical environment is important in terms of accessibility of herbs and plants in various spaces. Selection criteria have also changed by means of spatial context. Documentation of ethno medicine in Hooghly district of West Bengal is still witnessing an existential reality of the ethno-medicinal usage. Out of 37 herbal plants, major portion of the medicines (48.9%) were used by Santals of all age groups in the village. Ethnomedicine has special application for the children (24.9%) and women (10.8%) respectively. Different parts of the local plants are used for regular healing, such as, root (10.81%), seeds (5.40%), fruits and flowers (5.40%), bulb and latex (2.7%). Leaves (64.9%) dominate among other used parts of the plants used for medicine (Lal and Neeraj, 2019). This study was done in Hooghly district, which is very close to the urban zones. As a consequence to the proximity of urban centres influence of neighbouring Hindu caste population is quite prominent. Some herbal plants have also been used traditionally by the Bengali speaking caste people in several parts of West Bengal (Basu, 2018; Basu and Choudhury, 2018).

Use of animal products as a part of ethno-medicinal practice among Santals has rarely been recorded. However, it is found that Santals in Bankura district use animal resources for curative purposes (Ghosh, Singhamahapatra and Mandal, 2013). Four very old Santal members of the Puinan village informed about the medicinal significance of various animals living in their surrounding ecosystem. Animal flesh is of prime focus. Shell, wax and some secondary animal resources, like honey, soil from termite mound are also with certain prevalent therapeutic applications in their daily life. This is shown in table -3.

Table – 2 Use of the plants as medicine

Sl. No	Local name	English name	Scientific name	Family	Habit	Used part	Binding element	Disease	Application procedure	Preferable age group
1	Rahorsakam	Pigeon pea	<i>Cajanus cajan</i>	Fabaceae	Tree	Leaf	Jaggery Pamelo	Jaundice, blood purification	Leaves smashed, extract mixed with one table spoon jiggery and is taken once in a day	Children
									Leaves smashed two table spoonful of the extract added to one cup of pamelo juice. The juice taken twice a day	Adults
2	Karybuhu	Creat	<i>Andrographis peniculata</i>	Acanthaceae	Herb	Leaf	Honey	Improve liver function, cure worm infestation	Juice of a handful of karybuhu regularly consumed with a table spoon of honey in empty stomach in the morning	Children
3	Kuleknata	Swampweeds	<i>Hygrophila auriculata</i>	Acanthaceae	Herb	Leaf	water	Anaemia	Patient has to consume juice of leaf, once in a day at least for one month	All age groups
4	Rhol	Indian hog plum	<i>Terminalia chebula</i>	Combretaceae	Tree	Seeds	water	Constipation	Mixed with hot water and honey, make a smooth paste then have it after dinner.	Adults
5	Tulsi	Holi basil	<i>Ocimum tenuiflorum</i>	Lamiaceae	Herb	Leaf	Honey	Cough and cold	Extract of handful of tulsi leaves and honey mixed, consumed three times in a day, until recovery.	All age groups

6	Bakosh pata	Malabar nut	<i>Justicia adhatoda</i>	Acanthaceae	Herb	Leaf	Water	Cough	Juice of bakosh leaf consumed once a day	All age groups
7	Sashang	Turmeric	<i>Curcuma longa</i>	Scrophulariaceae	Annual herb	Root	Milk, lime cake (chun)	Sprain, joint pain	Sashang paste mixed with some lukewarm lime cake, applied on the affected surface as per requirement	Children, and adult persons
8	Rushun	Garlic	<i>Allium sativum</i>	Amaryllidaceae	Herb	Bulb	Mustard oil	Ear problem	Juice of the bulb consumed in empty stomach, at least for one week	Children
9	Patharkuchi	Air plant	<i>Bryophyllum pinnatum</i>	Crassulaceae	Herb (erect succulent)	Leaf	water	Sore and lesion	Boiled rushun consumed daily with parboiled rice and some drops of mustard oil	For lactating women
10	Monosa	Indian spurge tree	<i>Euphorbia nerifolia</i>	Euphorbiaceae	Shrub (succulent spinous)	Leaf, Stem	Honey	Cough and cold	Smooth paste applied on affected surface at least twice a day.	All age groups
11	Akando	Crown flower	<i>Calotropis gigantea</i>	Asclepiadaceae	Shrub	Leaf, latex	Nil	Joint pain, insect bite	Juice extracted from stems or leaves, mixed with honey, used to alleviate cough and cold.	All groups
12	Thankuni	Indian pennywort	<i>Cemella asiatica</i>	Apiaceae	Herb (creeper)	Leaf	Turmeric	Stomach pain	Heated leaves are applied on the painful area. Latex directly applied on the affected area	All age groups

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13	Kesuri pata	Bhringraj	<i>Eclipta prostrate</i>	Asteraceae	Herb	Leaf	Water and salt	Sore in the mouth and hair fall	A smooth paste of the leaf mixed with salt and water, taken once a day in empty stomach. In case of hair fall, juice extracted handful of the leaves, applied directly on the scalp	All age groups
14	Horkkoncha	Mexican prickly poppy	<i>Argemone Mexicana</i>	Papaveraceae	Shrub	Leaf	Wheat flour and water	Stumbling and swallowing	Paste made with two tablespoons of wheat flour with 10-15 leaves, directly applied on the affected surface, at least for three days	All age groups
15	Buri dantan	Chaff flower	<i>Achyranthes aspera</i>	Amaranthaceae	Shrub	Root	Nil	Fever	Root of the plant collected in early morning, string with white thread, with a deep faith in Goddess Manosha fasten it on right wrist (if son) or left wrist (if daughter) of her child.	Children
16	Dhubi ghas	Bermuda grass	<i>Cynodon dactylon</i>	Poaceae	Herb	Leaf	mil	Gum bleeding	Patient has to chew a generous amount of the leaves, once in a day	Adults
17	Neem	Margosa	<i>Azadirachia indica</i>	Meliaceae	Tree	Leaf, Stem	Water	Intestinal worm, Gingivitis	Prepare a small pills of the neem leaves. Children have to take it at least thrice in a week. Adult individuals usually chew and crushed a thin stem of the neem every morning	Children, Adults

18	Ghetu pata	Hill glory bower	<i>Clerodendrum infortunatum</i>	Lamiaceae	Shrub	Leaf	Water, honey	Roundworm	Prepare small pills of the leaves with water and honey. Children have to consume it in the morning in empty stomach once in a week	Children
19	Mungaara	Drumstick leaf	<i>Moringa oleifera</i>	Moringaceae	Tree	Leaf	water	Immunity booster	Take lukewarm juice of mungaara, at least once in a week	Children
20	Lapung hara	Mountain knot grass	<i>Aerva lanata</i>	Amaranthaceae	Shrub	Root	Peppercorn, water	White discharge	Smooth paste made with water and a tablespoon peppercorn. Patient consume it and continue once in a day, after three days of interval	Especially women
21	Birbigar	African eggplant	<i>Solanum anguivi</i>	Solanaceae	Shrub	Fruit	Mustard oil	Bronchitis	8to10 fruits boiled in a cup of mustard oil. Applied on the chest of the patient.	All age groups
22	Peyara pata	Guava leaf	<i>Psidium guajava</i>	Myrtaceae	Tree	Leaf	Salt	Stomach ache, dysentery	Chew small leaf of guava with a pinch of salt at least for a minute, twice in a day	All age groups
23	Turitunum	Thornapple	<i>Datura metel</i>	Solanaceae	Shrub	Fruit	Mustard oil	Chest congestion, Bronchitis	Smooth paste of the fruit made without seeds, boiled with a cup of mustard oil. Applied on the chest once in a day, continued as per requirement	All age groups

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24	Peyaj	Onion	<i>Allium cepa</i>	Amaryllidaceae		Bulb	Mustard oil	Joint pain	Paste of the bulb mixed with warm mustard oil and applied on affected body parts	Adults
25	Pan	Betel leaf	<i>Piper betle</i>	Piperaceae	Herb	Leaf	Water	Migraine, headache	Juice of the pan applied on forehead of the patient	Adults
26	Kodom	Burflower-tree	<i>Neolamarkia cadamba</i>	Rubiaceae	Tree	Leaf	Water	Stomach pain	Juice extracted from leaves, mixed with common salt, taken in empty stomach.	Adults
27	Tamakur	Tobacco	<i>Nicotiana tabacum</i>	Solanaceae	Herb	Leaf	Nil	Snake bite	Extract of handful amount of leaves on snake bite spot of the patient.	All age groups
28	Tandi chatam era	Amrul or Indian Sorrel	<i>Oxalis corniculata</i>	Oxalidaceae		Leaf	Water	Gastroenteritis (pitti bomi)	Extract of the leaves taken once in a day and continued for a week	All age groups
29	Kayra	Banana	<i>Musa paraddisiaca</i>	Musaceae	Herb	Stem	Water	Liver problem	A glass of banana stem juice taken in empty stomach	Adults
30	Murut	Polash or parrot tree	<i>Betula monosperma</i>	Fabaceae	Tree	Seed	Mustard oil	Scorpion bite	Fine powder of the seeds mixed with mustard oil, applied immediately on the affected area	All age groups

31	Shimul	Cotton tree	<i>Bombax ceiba</i>	Malvaceae	Tree	Flower	Nil	Excessive menstrual bleeding	Smooth paste made of 3-5 flowers, patient has to take it daily after lunch	Only women
32	Kusumbibaha	Marigold	<i>Tagetes erecta</i>	Asteraceae	Herb	Leaf	Nil	Prevent bleeding	Juice extracted from leaves and applied directly on the cut or scraped area	All age groups
33	Baromasia	Nayantara or Cape periwinkle	<i>Catharanthus roseus</i>	Apocynaceae	Herb	Leaf	Nil	Diabetes	Juice made of the leaves consumed 2 tablespoon in every morning in empty stomach	Adults
34	Kukruchubaha	Morog jhuti or Cockscomb flower	<i>Celosia cristata</i>	Acaemaranthac	Herb	Flower	Water	Dysentery, Diarrhea	2-3 flowers poured in a glass of water. Patient consumes the water at three hours interval in a day	Children
35	Eradom	Castor oil plant	<i>Ricinus communis</i>	Euphorbiaceae	Herb	Root	Rock salt	Scorpion sting	Smooth paste of the root mixed with salt, applied directly on the affected area	All age groups
36	Konrutaki	Wild tomato	<i>Solanum barbisetum Nees</i>	Solanaceae	Herb	Leaf	Water	Pox	Handful of leaves soaked overnight in a glass of water. Patient takes the strained water twice in a day, at least for one week	All age groups
37	Tyarapata	Eucalyptus	<i>Eucalyptus cinerea</i>	Myrtaceae	Tree	Leaf	Coconut oil	Post-surgery pain relief	Boiled 8-10 leaves with 4 tablespoon of coconut oil, the warm oil applied on the abdomen of the new mother	Especially women (after child's birth)

Table 3 – Use of animal resources for medicine

Sl. No.	Local name	English name	Scientific name	Used part	Disease	Application procedure	Preferable age group
1	Kacchhuya	Indian Turtle	<i>Geochelone elegans</i>	Shell	Skin disease	Shell dusts are usually applied with coconut oil as per requirement	Adults
2	Gondhogokul	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	Meat and scrotum	Increase the vision, hernia	Usually meat is consumed by the people once a week or as per requirement	Vision for children, hernia for women
3	Gongha and Jhinuk	Snail and Oyster	<i>Pila sp.</i> <i>Lamellidens jenkinsianus</i>	Meat/ flesh	Increase immunity, disease prevent heart problems	Flesh of the snail is cooked as a curry with some vegetables like potato, onion, brinjal and consumed it at least once in a week	All age groups
4	Kulai	Hispid hare	<i>Caprolagus hispidus</i>	Meat	Prevent loose motion	Meat is well cooked with seasonal vegetables and consumed once in a month with rice	Children
5	Moom	Bee wax	<i>Cera alba</i>	Wax	Cracked heel, dry skin	Hot and liquid wax is mixed with coconut oil and applied on the cracked part twice in a day	Adults (especially women)
6	Rui pokar chata	Termite soil	<i>Hemimetabolous neopterans</i>	Termite soil	Menstrual pain relief	Soft termite soil mixed with water into a smooth paste and applied on lower abdomen twice or thrice in a day during menstruation	Only adult women
7	Rokoch	Land snail	<i>Cyclophorus saturnus</i>	Flesh	Improve the eye sight	Flesh of rokoch is cooked as a curry with some vegetables like potato, onion, brinjal and consumed at least once in a week	Especially children
8.	Yele sunum	Honey comb	<i>Apis mellifera</i>	Honey	Remedy from dry skin, cough	Yele sunum consumed with lukewarm water after dinner for relief from cough and directly applied on dry skin to prevent extreme dryness	Especially children but it can be applied for any age groups

Current use of ethnomedicine in healing practices among Santals

Santals mostly convey the method of traditional healing to the next generations, as a part of their acculturation process. According to the participants in the field enquiry, traditional medicines are made out of extracts from both plant and animal resources. Present study shows that, mostly women (32.7%) use the traditional medicines today. However, young women go for allopathic treatment, like vaccines and polio doses. They also visit hospitals for any emergency and/or critical health condition. In case of men, homeopathic treatment is their second choice followed by Ethnomedicines, as shown in table – 4.

Table – 4

Healing pattern preferred by Santals shown on the basis of gender

Gender of the Participants	Prevalent Healing pattern (n=174)			
	Homeopathic treatment	Allopathic treatment	All	
Men	33 (18.9%)	19 (10.9%)	10 (5.7%)	16 (9.1%)
Women	57 (32.7%)	07 (4.02%)	21 (12.06%)	11 (6.3%)

In this study, data of present-day healing patterns are collected from two generations. Information gathered and analyzed on the basis of age and their educational attainment. It is found that attainment of higher level of education show higher inclination to follow allopathic medicines, as prescribed by modern doctor (table-6). Adolescent participants are largely dependent on their family members for their medical emergencies. However, school going children are well aware of allopathic treatments, as they are getting facilities from their schools. Additionally, with regular interventions of government appointed health workers (*Aasha kormi*), the villagers are enlightened about the efficacy of allopathic medicines. Now-a-days, young adult women mostly prefer allopathic medicines for treatment of any medical emergencies, especially for childbirth. Least dependency on ethnomedicine is shown by the young generation (table-5).

Table – 5

Preference of healing measures followed by the Santals shown on the basis of their age groups

Age groups in years	Prevalent Healing pattern (n=174)							
	Ethno-medicine		Homeopathic treatment		Allopathic treatment		All forms of treatment	
	Men	Women	Men	Women	Men	Women	Men	Women
15 – 25	3 (1.72%)	13(7.47%)	10(5.74%)	4(2.29%)	9(5.17%)	11(6.32%)	4(2.29%)	7(4.02%)
26 – 36	8(4.59%)	15(8.62%)	04(2.29%)	2(1.14%)	1(0.57%)	5(2.87%)	5(2.87%)	3(1.72%)
47 – 57	16(9.19%)	18(10.34%)	3(1.72%)	1(0.57%)	0	3(1.72%)	7(4.02%)	1(0.57%)
58 and above	6(3.44%)	11(6.32%)	2(1.14%)	0	0	2(1.14%)	0	0

Table – 6

Preference of Healing measures followed by the Santals shown on the basis of their educational status

Educational status	Prevalent Healing pattern (n=174)							
	Ethno-medicine		Homeopathic treatment		Allopathic treatment		All forms of treatment	
	Men	Women	Men	Women	Men	Women	Men	Women
Non-literate	5(2.9%)	11(6.32%)	-	-	-	-	-	-
Primary education	9(5.17%)	27(15.51%)	13(7.47%)	6(3.44%)	08(4.6%)	17(9.77%)	13(7.47%)	9(5.17%)
Secondary education	2(1.14%)	3(1.72%)	3(1.72%)	-	8(4.6%)	07(4.02%)	-	-
Higher Secondary education	3(1.72%)	2(1.14%)	7(4.02%)	4(2.29%)	3(1.72%)	10(5.74%)	02(1.14%)	-
Graduation	-	-	-	-	1(0.6%)	-	1(0.6%)	-

Tentative obstacles for transmitting the ethno-medicinal knowledge to the next generations in the Santal community

The transmission of indigenous knowledge on medicine one generation to the next generation of the Santal community faces several obstructions. It is essential for recognizing, addressing and preserving this heritage, which is conveyed orally. The obstructions are discussed below:

- *Diminishing of the legacy of oral tradition*

The transmission of indigenous medicinal knowledge to the next generation of the Santal community encounters several formidable barriers, each of which is pivotal to acknowledge and address, in order to safeguard this invaluable legacy. One such barrier is the reliance on oral tradition. A 78 years old Santal lady opined as follows:

‘In the old days, we learned about traditional medicine from our parents and grandparents. They themselves learned from their parents and grandparents too. But no one wrote it down. Now that we’re getting old, we’re finding it hard to remember everything. And our children and grandchildren do not seem to know much about our traditional medicine. It is sad because we are losing our ancestors’ knowledge of natural medicine since it was never written down.’

The Santal community has traditionally passed down their profound knowledge of medicinal plants and healing practices through oral communication. While this oral tradition has been effective for generations, it is inadvertently contributing to the loss or distortion of information over time. As younger Santal individuals become increasingly integrated into modern societies and urban environments, there is a risk of this vital knowledge eroding due to lack of comprehensive written documentation. Therefore, it is imperative to recognize the significance of this oral tradition and work towards preserving and revitalizing indigenous medicinal knowledge embedded in the Santal community.

- *Loss of biodiversity in ecosystem*

Another critical challenge is the loss of biodiversity, which poses a significant hurdle to the continuity of knowledge about traditional medicinal plant. As natural habitats are degraded and biodiversity declined, the availability of medicinal plants and resources essential for traditional healing practices diminished. A 62 years old Santal man stated, *‘People are cutting down trees to build houses and factories. We are losing trees. Because of this, there are fewer trees and plants around. It is becoming difficult to find traditional medicinal plants because of all this urbanization’.*

The Santal people have a deep connection with the environment and rely on specific plants for their medicinal properties. However, the loss of these plants due to deforestation, urbanization, and environmental degradation not only threatens the Santal community's traditional healing practices but also hinders the transfer of this knowledge to the younger generation. To overcome this barrier, efforts to conserve and restore local biodiversity, coupled with education about sustainable harvesting and cultivation of medicinal plants, are crucial to ensure the preservation and transmission of indigenous medicinal knowledge among the Santal community.

- *Modernization within the Santal community*

As modernization sweeps into Santal communities, it introduces new lifestyles, technologies, and ways of thinking that can lead to a disconnection from traditional practices. The allure of modern medicine and healthcare systems, often considered more accessible and effective, is deterring younger Santal individuals from embracing and learning their ancestral medicinal plant knowledge. A 32 years old Santal lady stated, *'We don't know much about medicinal plants and herbs. We also do not know a lot about natural medicine, and we are not sure if they really work or not. That is why we do not use them much. These days, ASHA workers visit every home to check on pregnant women and babies after they are born. They give polio drops to the babies. We have a health centre in our village where we can go for check-ups for free, and they give vaccine to our children. We also get free medicine from these health centres and government hospitals. I chose to have my baby in the hospital instead of with a local midwife because I know it is safer there.'*

The rapid urbanization and changing dynamics of the modern world can create a cultural gap, causing younger generations to prioritize contemporary practices over the age-old wisdom of their elders. Recognizing these modernization-related challenges and working towards a balanced integration of traditional and modern healthcare systems is crucial in preserving the invaluable indigenous medicinal heritage of the Santal community for the future.

- *Easy accessibility of modern medical treatments*

The easy accessibility of modern medical treatments and healthcare professionals stand out as compelling hindrance. With modern healthcare readily available, younger members of the Santal community may increasingly opt for conventional medical practices, which are often perceived as more efficient and dependable. The convenience of visiting doctors and medical facilities can undermine the inclination to learn and perpetuate the intricate knowledge of medicinal plants and traditional healing practices. According to a 42 years old Santal man:

'Finding plants for traditional medicine is difficult, but buying medicine from local shops is easy. Sometimes, health centres also give out medicines for free.'

To sustain this vital aspect of Santal culture, it is imperative to strike a balance that acknowledges the value of indigenous knowledge while integrating modern healthcare within the community's healthcare landscape.

Conclusion

The study reveals a shift in preferences, with younger generations, particularly women, showing a greater inclination towards allopathic treatments, including vaccines and hospital visits for emergencies or critical health conditions. The study also captures changing opinions among different age groups and educational backgrounds, with higher levels of education correlating with increased reliance on allopathic medicine. Despite these shifts, ethno-medicinal practices remain prevalent among the Santal people, underscoring the enduring significance of traditional healing knowledge within their community. The Santal community, as the largest indigenous group in India, serves as a rich repository of ethno-medicinal practices that have been documented and practiced across various regions of this country. This study contributes to our understanding of the ongoing dynamics of healing patterns and the evolving relationship between traditional and modern healthcare practices among the Santal people. While plant-based Ethnomedicine has been extensively researched, there is a notable gap in literature concerning the use of animal-based ethno-medicinal practices among the Santal people. Additionally, limited data exists in respect to transmission of indigenous medicinal knowledge to the next generation and the barriers involved. Our study aims to address these gaps by focusing on the transmission of knowledge, barriers, and utilization of animal-based Ethnomedicine among the Santal community.

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