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THE TRADITIONAL HEALING PRACTICES VIS-A-VIS MODERN MEDICINE AMONG THE SANTALS: AN ANTHROPOLOGICAL STUDY IN SUSUNIA HILL REGION OF BANKURA AND MOUSUNI ISLAND OF SOUTH 24 PARGANAS, WEST BENGAL

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Abstract: The eco-spatial shift through migration amongst the tribal communities over the years has caused alternations in health care practices, in which indigenous knowledge-based healing tradition has continuously undergone production-discontinuity-reproduction over time and space in different environmental conditions. The present study is an empirical one, representing the changing pattern of health care practices amongst the Santal migrants who have relocated themselves from the Susunia hill and its surroundings of Bankura district to the Mousuni Island in Sundarban delta region of South 24 Parganas district of West Bengal in India. The study exhibits a declining trend in ethnomedicinal practices amongst the Santal migrants in an altered environmental setting.

Keywords: Santal, Tradition, Migration, Ecology, Environment, Healing, Ethnomedicine.

INTRODUCTION

Health is a stable and balanced condition of body and mind. It is a state of physical, mental, and social well-being and not merely the absence of disease and infirmity(WHO, 1948). Health is not solely biological; it has ecological determinism and social-cultural factors. (Mutatkar, 1979) The absence of physical disorder, abnormality, pain, and discomfort in a human body is considered healthy. (Bodding, 1911) To Levinson and Gaccione, the interaction of culture with health produces different concepts related to health and being healthy across different communities over the globe. In all cultures, people are concerned about their health, and communities possess shared beliefs and behaviours about prevention and treatment from illness and injury. All these beliefs and practices are related to the health care system while the health care system can differ from culture to culture and share a number of common elements. (Levinson and Gaccione, 1997) Accordingly, every community over the years has developed indigenous knowledge in different ways to address disease, illness, and traditional healing; be it plant medicine, magico-religious practices, and other scientific and modern treatment modalities sufficing both diagnosis and curative needs across different environmental conditions.

Cassell and Marinker have differentiated between the concepts of disease and illness.

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For Cassell, "Disease is something an organ has while illness is something a man has." (Cassell:1976:27) Disease refers to an abnormal condition affecting an organism. This abnormal condition could be due to infection, degeneration of tissue, injury/trauma, toxic exposure, development of cancer, etc. This is what needs to be 'cured', especially if it's life-threatening. Illness on the other hand refers to the feelings that might come with having a disease. Feelings like pain, fatigue, weakness, discomfort, distress, confusion, dysfunction, etc. – the reasons people seek healthcare – and usually the way people measure their success with treatment. It is very important to understand that feelings of illness can be vastly affected by many non-disease factors, such as expectations, beliefs, fears, feelings/moods, and culture. Being ill is a very personal experience, and can vary tremendously and be affected by very different things between people with the same 'disease', and for Marinker, "Disease is a pathological process and has a biological form. There is objectivity about the disease which doctors are able to see, touch, measure, and smell, the external and public mode of unhealthy which has a social role, a status, a negotiated position in the world, whereas illness is a feeling, an experience of unhealthy which is entirely personal, interior to the person of the patient." (Marinker:1975:82)

The indigenous knowledge-based traditional healing, which has continuously undergone production, discontinuity, and reproduction over time and space. Warren has defined indigenous knowledge as "the local knowledge that is unique to a given culture or a society. Indigenous knowledge contrasts with the international knowledge system generated by universities, research institutions, and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural resource management, and a host of other activities in rural communities". (Warren:1991:1) WHO have defined traditional medicine or healing as a medical knowledge system that developed over generations within various societies before the era of modern medicine, including the health practices, approaches, knowledge, and beliefs incorporating plant, animal, and mineral-based medicines, spiritual therapies, manual techniques, and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being. (WHO, 1999) Traditional ecological knowledge is another term used to describe those aspects of the indigenous knowledge system that are directly related to the management and conservation of the environment. Johnson has defined traditional ecological knowledge as, "a body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use." (Johnson:1992: 4) Eco-spatial shifts have caused communities to adopt a new form of treatment practices and a globalized knowledge system.

From the above view, cultural ecology can be considered as one of the

key components of medical anthropology where differences in environmental conditions make society adapt to altered ethnobotanical settings, magico-religious performances, and other cultural traits in the context of health care management for a particular tribal community settled in diverse spatial settings through migration. For Tucker, a social system is determined by its environmental resources. The main idea of cultural ecology is to determine whether cultural adaptation toward the natural environment initiates social transformations of evolutionary change, (Tucker, 2013) and the environment determines and limits a culture. (Semple, 1911 and Kroeber, 1969) When a community relocates itself to a new locality, often it does not have the opportunity to restore its traditional cultural practices as the new ecology and its environmental features do not provide them the variables required for sustenance of their tradition. Accordingly, age-old cultural practices discontinue and a renovated form is produced in the altered spatial setting. The present study tries to understand the way ethnomedicine has become a key fluctuating variable formed as a product of ecological changes which provides and limits environmental features.

LITERATURE REVIEW

The history of ethnomedicine dates long back. The study of medicinal plants was academically first introduced by John W. Harshberger in 1895 which later included in Ethnomedicine, a sub-specialized area of Medical Anthropology. Lieban has defined ethnomedicine as a diverse subject that includes magico-religious, ethnobotany, medical and chemical procedures. (Lieban, 1973) The ethnomedicinal researches started decades ago in many countries. Ethnomedicinal studies relate the research on illness as a psycho-social phenomenon that forms the knowledge base of clinical and social science. (Kleinman, 1980) The widely scattered literary sources on ethnomedicine revealed that nature provides about half of the clinically useful drugs for the management of primary health care throughout the world. In India, the use of plants for treatment purposes dates back to the Rig Vedic period between 3500 and 1800 BCE where Humans have learned the use of medicinal plants from the animals (Raghunathan, 1987), and more than 35000 plant species are being used around the world for medicinal purposes. (Van Seters, 1997)

ETHNOMEDICINAL STUDIES

The uses of 444 naturally distributed taxa belonging to 62 families are used in traditional medicine in the East Anatolian region of Turkey. (Altungdag and Ozturk, 2011) There are 20 plant species that are in use for temporary and permanent birth control as contraceptives or abortifacient in Bargarh if Western part of Odisha. (Sen *et al.*, 2012) An ethnobotanical study carried out amongst the locales of Jaisinghpur, Kangra in Himachal Pradesh have reported 21 plants with medicinal properties used as herbal medicines for childcare. (Dhiraj and Anjna, 2013) The enriched data on 48 medicinal plants were reported from Nawargaon, Chandrapur

district of Maharashtra. (Bakare, 2014) An ethnomedicinal study documented 153 medicinal plants used by the inhabitants from Gundlabrahmeswaram Wildlife Sanctuary area from the Eastern Ghats of Andhra Pradesh. (Kanneboyena *et al.*, 2015) Traditional uses of 40 ethnomedicinal plant species representing 37 genera and 28 families with correct botanical identification markers were reported from Kandhamal district of Odisha. (Panigrahy *et al.*, 2016) Total 214 plant species with medical importance were documented from the fringe villages of Col. Sher Jung National Park, Simbalbara at Sirmour in Himachal Pradesh. (Saini and Sood, 2017) A total of 61 medicinal plants were used in different treatments by the local healers at Kilikhar Chiwog of Mongar Dzongkhag in Bhutan were documented. (Cherti *et al.*, 2018) The documentation was recorded out of a total of 92 ethnomedicinal plant species including trees, shrubs, herbs, and climbers from which 35 species were used for ethnomedicinal purposes to cure 30 different diseases prevailing in the Kirtinagar Block of Tehri Garhwal in Western Himalaya. (Singh *et al.*, 2019) The ethnomedicinal study in Pindari Valley situated in the Bageshwar district of Uttarakhand has enlisted a total of 80 ethnomedicinal plants. (Kumar *et al.*, 2020)

RECENT ETHNOMEDICINAL STUDY ON COVID-19

The Iranian traditional healers have recently used a number of medicinal plants to prevent and treat COVID-19. Due to the COVID-19 pandemic's limitations, 26 traditional healers in the Kerman and Zahedan regions of Iran have conducted oral interviews and prescribed COVID-19 remedies, which were compiled along with their scientific names and medical properties. Herbs with some proven chemical properties linked to the respiratory system were listed which were most likely used in the prevention of COVID-19. *Althaea officinalis, Hordeum vulgare, Zataria multiflora, Zingiber officinale, Malva sylvestris, Allium sativum, Glycyrrhiza glabra,* and *Matricaria chamomilla* are considered as the most popular herbs by Iranian traditional healers for prevention or treatment of COVID-19. Recent studies have shown that the above-listed herbs are effective in treating respiratory disorders like influenza and also possess medicinal properties that are antitussive and immune-modulating. (Maryam *et al.*, 2021)

OBJECTIVES

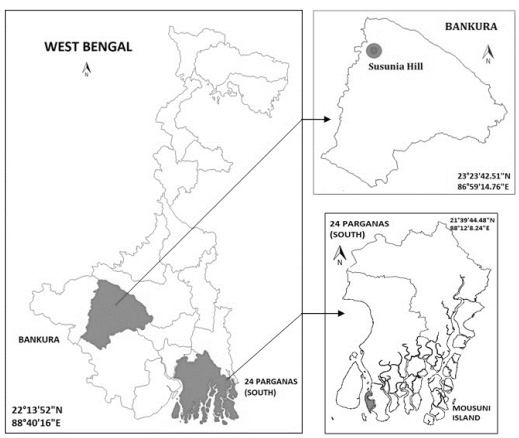
In the context of the argument presented in the preceding paragraph, the present study seeks to meet two prior objectives. Firstly, to observe the nature of the prevailing disease, illness, and treatment practices performed amongst a particular tribal community settled in two different ecological settings, and secondly to observe and interpret the changes in ethnomedicinal practices among that particular in between pre, and post-migration or spatial shift.

METHODOLOGY

The study has been conducted amongst the Santal community in two different ecological settings. The first one was on the 'traditional' settlement of Santals around the Susunia Hill region of Bankura, and the second field unit was on the group of migrated Santal settlements in Mousuni Island in the district of South 24 Parganas under the Sundarban delta region in West Bengal, India.

The study has been completed using the most distinct anthropological method of first-hand fieldwork in the first half of 2019. The information has been collected on the aforesaid objectives within the duration of one year from the localites, allopathic and homeopathic doctors, compounders, and traditional healers through an interview schedule containing open-ended questions to document their knowledge on diagnosis and treatment of the prevailing disease and illnesses. An attempt of observation and case studies were made to find out the causes of different diseases along with their respective treatment patterns, particularly the ethnomedicinal practices. The purposive selection technique has managed to gather relevant and comprehensive information. The quantitative techniques have been used to calculate the frequency percentile of prevailing disease and illnesses spread in the studied settings which were collected from 280 individuals from Bankura and 333 from Mousuni Island. Further, the study is analysed and interpreted primarily and predominantly through a qualitative approach; however, quantitative information has also been used.

Figure 1. The Field Units: Susunia Hill region of Bankura and Mousuni Island in South 24 Parganas



Source: www.wb.gov.in

FIELD UNIT IN SUSUNIA HILL REGION, BANKURA

Susunia hill region of Bankura is an important archaeological site with the oldest

rock inscription along with floral diversity. The locality is predominantly inhabited by the Santal community at a large. The Santals live in the adjacent villages around the hill. We have selected the village Haphania which comprises two hamlets namely Paharpara and Sidhapara for the present study. At the time of fieldwork, 152 people were lived in Paharpara within 21 households under a family count of 41, and in Sidhapara, 128 were lived in 18 households under a family count of 34. The village had a linear settlement pattern with five government-funded public lavatories for defecation. But open-air defecation is predominantly practiced by the locales. They use pond water for multiple household purposes and both hamlets have one tube-well each for drinking water. The Santals have been predominantly engaged in agricultural activities. The other forms of professional engagement include daily labour, mason, shopkeeper, government services, traditional healers, etc.

FIELD UNITS IN MOUSUNI ISLAND, SOUTH 24 PARGANAS

Mousuni Island is a landmass rinsed along with adjacent Patibunia by sea and river waters; all three sides are open to the Bay of Bengal and the river Muri-Ganga flows from the north-western part through Pitts Creek and meets the sea in the south.

The Census 2011 describes the demographic scenario of the studied setting where it has been noted the overall population of Mousuni Island is 22073. The community composition of the villages includes Muslims, Hindus, and Santals who thrive together in this marine environmental condition.

At the time of fieldwork, the total Santal population count in Mousuni Island is 333 which is about one and a half percent of the total population as per the 2011 census was distributed in 47 households and 93 families.

The Santal migrants were settled in four villages of Mousuni Island namely *Baliara, Poilagheri, Kusumtola, and Bagdanga. Baliara* is located on the coastline of the Bay of Bengal where 187 individuals were lived in 25 households under a family count of 50. In *Kusumtola,* 54 people were distributed in 6 households under a family count of 16. *Poilagheri had* 60 in 8 households under a family count of 17, and *Bagdanga* had the least Santal count of 32 individuals were lived under 8 households under a family count of 10. It was observed that almost all Santal families in the studied villages had no lavatory to defecate, and those who had private lavatory is still believed in open-air defecation to sustain natural hygiene. The pond and river water were used for domestic purposes and each of the aforesaid villages had one tube well for drinking water. They predominantly engaged in the daily labour of constructions sites and agricultural activities. The other forms of professional engagement include fishing, teaching, mason, shopkeeper, government services, etc.

HISTORICAL GENESIS OF SANTAL MIGRATION, OCCUPATION, AND ETHNOMEDICINAL PRACTICES

In the present study, the migration history of the Santal migrants of Mousuni island has been reconstructed through comprehensive replies from the local narratives and age-old residents who have resided in the island over the last 50 years and even more. The study reveals that the Santals have migrated predominantly from Bankura district of West Bengal and Mayurbhanj district of Odisha with a percentage of 47 and 41 respectively, and nine percent of the rest were from erstwhile Midnapore, and the remaining three percent were reluctant to provide information on it and excused their inability to recollect their ancestral place. They had dependent on agriculture before migration and had agricultural lands in their traditional hailing places.

According to the narrators, a Santal family has violated the community's rules and regulations, and their family along with their relatives and supportive villagers were expelled from their traditional place, and they have discovered Mousuni Island. The island was densely forested back then, they started professing settlements after clearing up forests along with Hindus and Muslims. This multi-ethnic island was called 'The Island of Bad People' then because most of the migrants had a bad past and criminal activities in their traditional hailing places.

The Santal migrants have indulged themselves in fishing activities as their primary occupation instead of agriculture. But sooner, they were deprived of fishing by the dominant communities of Hindus and Muslims residing in the island because the dominant communities were completely dependent on fishing as their primary source of economy and livelihood, and they did not want Santals to interfere in their primary occupation. The dominance has forced the small group of Santal migrants to change their occupation from fishing to food gathering by exploring the nearest Jambudwip. Jambudwip is an open and densely-forested virgin island full of plants of fruit, vegetables, and medicinal properties, poisonous snakes, and small wild animals, from where they have collected woods, timber, fuel, small animals for livelihood. Also, medicinal plants were collected by them to cure a few minor and major diseases by the traditional healers of Santals. But, the Santal indigenous knowledge of medicinal plants has faced difficulties to understand the medicinal properties of plants available in this island area, because their traditional hailing place was hill-centric and a huge floral diverseness was found which limits and restricts their indigenous knowledge of healing practices in the periphery of hill-centric ecology and its given environment around Susunia hill.

A few days later, the Government of West Bengal has imposed IPC Section 144 in Jambudwip, and restricted the local people of Mousuni Island and adjacent areas from entering Jambudwip which greatly has affected Santal livelihood and medicinal practices. Further, the government has allotted agricultural lands to every family residing in Mousuni Island, be it Hindu, Muslim, or Santal. But those

allotted lands have divided the Santal migrants into four different village areas close to the river and ocean of Mousuni Island, namely, Baliara, Kusumtola, Poilagheri, and Bagdanga. This scattered settlement of Santals has affected their communal solidarity till today. They again started professing settled cultivation after clearing up forested patches of land and turned out to be good in agriculture.

In the early part of the 1970s, a powerful cyclonic storm 'Bhola' hit this island. As an effect, the village was flooded with saline water which destroyed all the crops and turned the fertile agricultural lands into the barren field. After that, most of the Santal people in the age group of 17 to 35 have joined construction works as labour, and scattered in many parts of West Bengal, as well as in India. As a result, the generational transmission of indigenous knowledge sharing process of ethnomedicine, be it natural or magical by Santal's traditional healers to their learners has been discontinued because of the unavailability of good learners as they were mostly out for construction works.

HEALTH SCENARIO

The Santals around Susunia hill do possess and continue professing traditional health care practices over the generations which have been transmitted orally over the years. Here, a case of a male aged 57 years from Paharpara, Bankura who has received the knowledge of plant medicines from his father who in turn has gathered knowledge from the informant's grandfather. He has seen his father as an honourable person on the Island who had abilities to treat almost every disease and illness be it caused by environmental factors or supernatural. People from different religions consulted him for treatments. Fieldwork information reveals that the indigenous knowledge system makes the Santal believe someone to be healthy if he is able to consume food as usual and can perform the daily task without facing any difficulties, and no feeling of illness in any form. A case from a group of Santal males aged above 50 years from a Paharpara and Sidhapara, Bankura who has a very common notion of being healthy. For them, the perception of being healthy is that for a person who has enough power, stamina, and abilities to work and perform daily tasks. An ill body doesn't have the potency of consuming food as usual causing disease and illnesses. The traditional healing practices from yesteryears restore a person to normalcy from disease and illness borne out of any natural or supernatural causes.

A case of natural healing by an Ojha around Susunia hill in Bankura of C **(M, 58)**, who is a resident of Paharpara at Haphania in Bankura. He was a diabetic patient a few years back. Before going to any allopathic doctors, he consulted an Ojha from Netkamla village near Susunia Hill because the names of the allopathic medicines were unfamiliar to him and were difficult for him to afford. But the Ojha's treatment procedure was very simple to follow, and he felt that there was no need to take any allopathic drugs. He had to consume a mixture of *Thalkuni (Centella asiatica), Kulekhara (Hygrophila spinosa T), and Aakh (Saccharum officinarum)*

before breakfast for at least 45 days, and it worked like magic.

Another case of supernatural healing by a Moulabi in Mousuni Island of D **(F, 32)**, who resides at Baliara village in Mousuni Island, suffered a few days back when her child suddenly falls sick after returning from an invitation. The kid suddenly had a high temperature along with intense stomach pain. Her neighbours suggested, that she must consult the local Moulabi and she did so. Her child recovered in 2 days after undergoing magical spells from the Moulabi. The unavailability of Santal's traditional healer compels the migrated Santals of Baliara to depend on the local Moulabi or Ojha to overcome the community identity.

Initially, they are treated by the traditional healer with medicinal plants available in the vicinity or even some magical spells. If the healer fails then the localites undergo allopathic treatments from locally available infrastructure and medical personnel. Here, a case of a male aged 38 years, who was diagnosed with a tumour on his back. He has received traditional treatment from the healers available around Susunia Hill for half a year but they failed to cure the tumour. Finally, he had to go to the nearby hospital in Bankura town and consult with doctors available at the hospital. The hospital took immediate action and admitted him for operation. After the successful operation, some allopathic medicines were prescribed for at least one month. The Santals prefer to stay away from the allopathic treatment for a number of reasons like they are unable to remember the names of the medicines which are alien to their traditional culture. Some of the physicians misbehave with the natives and often ignore their queries, and the cost of some of the medicines and pathological tests are too expensive for the patients to bear. A case of a female aged 34 years was suffering from the emission of white fluid along with urine. She along with her husband consulted the lady gynaecologist available at the hospital. The doctor prescribed medicines that were very costly. The names and doses were also difficult for them to remember. Then the couple decided to take help from the traditional healer and the healer advised her to take one tablespoon *Shal (Shorea robusta)* bark dust mixed with water before breakfast till cure. After 6-7 months, the problem was cured.

Another case of a male aged 48 years consulted with the doctors to treat knee arthritis. A few pathological tests were advised which were very costly. Then the traditional healer of Netkamla village near Susunia hill advised him to take one tablespoon of *Majurjhuti (Elephantopus scaber)* root paste mixed with one glass of cow milk after dinner till cure. After a long period of one and a half years, his knee pain was completely gone.

These factors often make the Santal localites rely heavily on the traditional health care system as the healers are always polite and gentle who meet the queries of the patients and their family members. Further, the doses of herbal medicines are embedded in their worldview through their indigenous knowledge system and the medicines are cheap and affordable to them.

Eco-spatial shift through migration has caused the relocated Santal communities of Mousuni Island to adapt to the modern medical facilities and a globalized health-oriented knowledge system. The community migration of the Santals of Mousuni Island has changed the health care scenario in recent times as observed during the span of fieldwork. They do believe in the indigenous health care concepts of their forefathers inhabited elsewhere, but presently their traditional healing practices have been reduced and are predominantly restricted to health problems developing from supernatural causation. A case of a female aged 37 years is worth mentioning over here. Her husband had a fever a few days back. They consulted with a local medicine shop owner and took paracetamol for three days but nothing good happened apart from temporary remission of temperature. Then the couple went to a doctor who prescribed antibiotics and high-dosed paracetamol but again he had a fever. Finally, they approached the Moulabi who did magical spells on the patient and after three days his fever was gone. According to the Moulabi, the patient was a sufferer of evil eyes, so that, no medications were working in his body. They identified both natural and supernatural causes for the occurrence of disease and illnesses but rely mainly on allopathic and homeopathic drugs in everyday life apart from some.

The Santal migrants of Mousuni Island suffer from a few diseases which are alien to their cultural worldview of traditional hailing place, and the symptoms and treatment modalities of which are new incorporations in this altered eco-spatial setting.

In the following Table 1 and Figure 2, a comparison of the frequency of commonly prevailing diseases and illnesses as observed in the two fieldwork settings.

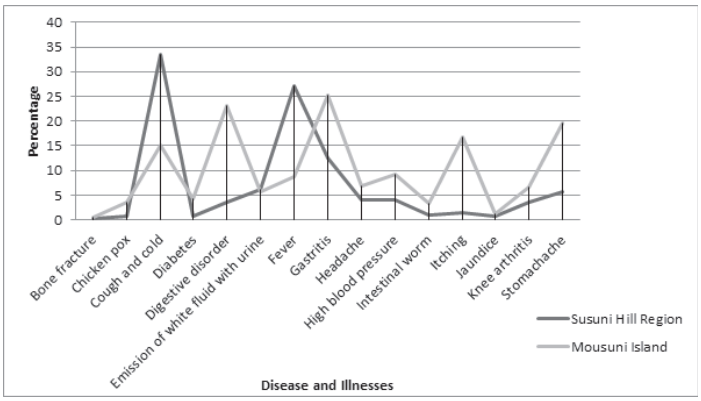
TABLE 1. NUMBER AND PERCENTAGE DISTRIBUTION OF PREVAILING DISEASE AND ILLNESSES IN SUSUNIA HILL AND MOUSUNI ISLAND

Susunia Hill Region	Prevailing Disease and illnesses	Mousuni Island
1 (0.36)	Bone fracture	2 (0.60)
2 (0.71)	Chicken pox	12 (3.60)
94 (33.57)	Cough and cold	50 (15.02)
2 (0.71)	Diabetes	14 (4.20)
10 (3.57)	Digestive disorder	77 (23.12)
17 (6.07)	Emission of white fluid with urine	19 (5.71)
76 (27.14)	Fever	29 (8.71)
35 (12.50)	Gastritis	84 (25.22)
11 (3.93)	Headache	23 (6.91)
11 (3.93)	High blood pressure	31 (9.31)
3 (1.07)	Intestinal worm	11 (3.30)

4 (1.43)	Itching	56 (16.82)
2 (0.71)	Jaundice	4 (1.20)
10 (3.57)	Knee arthritis	22 (6.61)
16 (5.71)	Stomachache	65 (19.52)

Source: The author.

Figure 2. Frequency Distribution of Prevailing Disease and Illnesses in Susunia Hill and Mousuni Island



Source: The author.

From the two fieldwork settings, 15 commonly prevailing diseases along with their treatments have been found. Comparing data on the frequency distribution of diseases from both localities, it has been seen that the occurrence of cough and cold (33.57%), and fever (27.14%) which are high around Susunia hill in comparison to Mousuni Island, 15.02% and 8.71% respectively, whereas, digestive disorders (23.12%), gastritis (25.22%), itching (16.82%), stomach ache (19.52%), which are mainly water-borne diseases have a higher frequency rate in Mousuni Island than around Susunia hill, 3.57%, 12.5%, 1.43%, and 5.71% respectively. Here, a case study of two traditional healers from Netkamla and Haphania villages near Susunia hill. According to them, during the month span of November to April, the frequency of cold and cough is high, but the occurrence of fever prevails throughout the year. The Santals rely on plant medicaments for these common daily illnesses as consuming allopathic pills for every minor ailment can have side effects.

For the three traditional healers from Baliara and Poilagheri villages and two allopathic doctors of Mousuni Island, stomach diseases are high in number in the island as it was not easy to get habituated to the change in drinking water quality post-migration for the Santals. During the Monsoon from June to August, a rise in the sea level causes the seawater to encroach upon the agricultural lands and ponds. The localites who use these ponds' water for household purposes suffer from major

and minor stomach problems.

The following Table 2, show the comparison in treatment processes usually practiced by the Santals of Susunia hill region and Mousuni Island, and Figure 3.1 along with Figure 3.2 clearly reflects that traditional medicine practice around Susunia hill is comparatively higher than Mousuni Island where allopath has its highest frequency in medicinal practice, which is followed by Table 3.1 including Table 3.1.1 and 3.1.2 shows the ethnomedicinal plants and organic materials used for treatment in Susunia hill region while Table 3.2 including Table 3.2.1 and 3.2.2 shows the details for Mousuni Island. In the following Table 4, a comparative analysis has been done on the ethnomedicinal usages of medicinal plants and organic materials for different diseases and illnesses as observed in Susunia Hill and Mousuni Island.

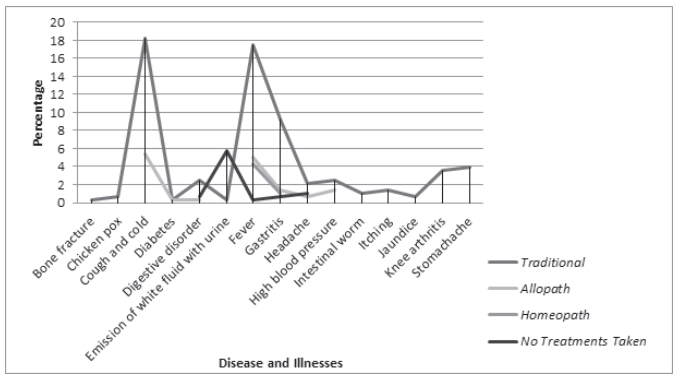
TABLE 2. TREATMENT PRACTICES OF PREVAILING DISEASE AND ILLNESSES IN BOTH SUSUNIA HILL AND MOUSUNI ISLAND

Treatment Practices preferred in Susunia (No & Percentage)				Common Disease and Illnesses	Treatment Practices preferred in Mousuni (No & Percentage)			
Traditional	Allopath	Homeopath	No treatment taken		Traditional	Allopath	Homeopath	No treatment taken
1 (0.36)				Bone fracture	1 (0.30)	1 (0.30)		
2 (0.71)				Chicken pox		12 (3.60)		
51 (18.21)	15 (5.36)	17 (6.07)	11 (3.93)	Cough and cold	6 (1.80)	28 (8.41)	14 (4.20)	2 (0.61)
1 (0.36)	1 (0.36)			Diabetes	5 (1.50)	9 (2.70)		
7 (2.50)	1 (0.36)		2 (0.71)	Digestive disorder		63 (18.92)	13 (3.90)	1 (0.30)
1 (0.36)			16 (5.71)	Emission of white fluid with urine		4 (1.20)	13 (3.90)	2 (0.61)
49 (17.50)	14 (5.00)	12 (4.29)	1 (0.36)	Fever		23 (6.91)	6 (1.80)	
26 (9.29)	4 (1.43)	3 (1.07)	2 (0.71)	Gastritis	9 (2.70)	67 (20.12)	7 (2.10)	1 (0.30)
6 (2.14)	2 (0.71)		3 (1.07)	Headache	6 (1.80)	15 (4.50)		2 (0.61)
7 (2.50)	4 (1.43)			High blood pressure	4 (1.20)	27 (8.11)		
3 (1.07)				Intestinal worm	2 (0.61)	8 (2.40)	1 (0.30)	

4 (1.43)				Itching		47 (14.11)	9 (2.70)	
2 (0.71)				Jaundice	3 (0.91)	1 (0.30)		
10 (3.57)				Knee arthritis		22 (6.61)		
11 (3.93)	2 (0.71)	2 (0.71)	1 (0.36)	Stomachache	6 (1.80)	53 (15.92)	4 (1.20)	2 (0.61)

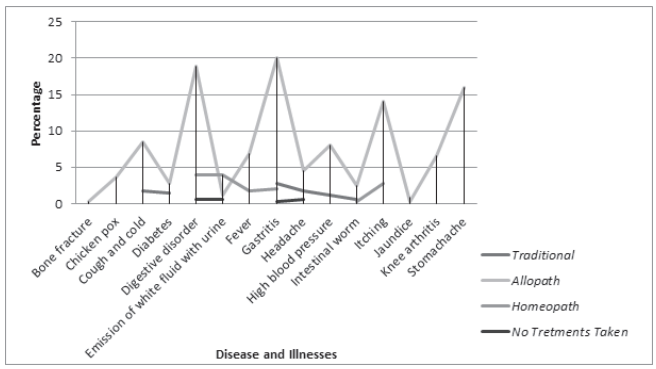
Source: The author.

Figure 3.1. Frequency Percentile Distribution of Treatment Practices of Prevailing Disease and Illnesses in Susunia Hill



Source: The author.

Figure 3.2. Frequency Percentile Distribution of Treatment Practices of Prevailing Disease and Illnesses in Mousuni Island



Source: The author.

From Figure 3.1 and Figure 3.2, the frequency polygon is showing a higher rate of traditional healing practices for prevailing diseases around Susunia hill, whereas in Mousuni island the allopathic and homeopathic treatments are more practiced

by the Santal migrants than traditional healing.

For a group of males aged between 40 and 50 years, who live in Paharpara and Sidhapara near Susunia Hill, whose families do believe in traditional medicines more than that of allopathic drugs. The cause for this faith is they believe that allopathic medicines are harmful to health; whereas plant and animal produced medicaments have been trustworthy from the ancient past as they have an established healing power against every major and minor disease and illness. The traditional healers are very polite and gentle and they have core knowledge of natural medicines and about their doses as per the age and sex of the patient.

In contrast to the aforesaid instance, another case of a male, aged 48 years, a local resident of Baliara in Mousuni Island reveals one's faith in modern allopathic treatment in comparison to that of traditional healing. For the informant, there's no good traditional healer available on the island, and those who practice traditional healing do not have enough knowledge to cure every type of disease. But in his old traditional settings of Mayurbhanj, Odisha, he had a strong faith in traditional healers and himself got cured of different diseases and illnesses with the help of traditional medicines.

TABLE 3.1.1 LIST OF ETHNOMEDICINAL PLANTS FOUND AROUND SUSUNIA HILL USED TO HEAL DISEASE AND ILLNESSES

Vernacular Name	Scientific Name	Usable Parts	Disease and Illnesses
Aakh	*Saccharum officinarum*	Stems	Diabetes
Ada	*Zingiber officinale*	Roots	Gastritis
Adakheta	*Zingiber corallinum*	Whole plant	Digestive disorder
Basak	*Justicia adhatoda*	Leaves	Cough and cold
Bel	*Aegle marmelos*	Leaves	Gastritis
Chirota	*Swertia chirayita*	Leaves, roots	Intestinal worm, jaundice
Dadhilata	*Wedelia trilobata*	Stems	Bone fracture
Dhuruntori	*Cymbopogon citrates*	Leaves	Cough and cold
Ghritakumari	*Aloe barbadendis miller*	Leaves	Headache
Gol morich	*Piper nigrum*	Seeds	Gastritis
Jowain	*Trachyspermum ammi*	Seeds	Digestive disorder
Kalmegh	*Andrographis paniculata*	Leaves	Intestinal worm, itching, stomachache
Kulekhara	*Hygrophila spinosa T*	Leaves	Diabetes
Machhkuda	*Pterospermum canescens*	Roots	Headache
Majur jhuti	*Elephantopus scaber*	Roots	Knee arthritis
Panjut	*Citrullus colocynthis*	Leaves	Headache

Sajne	*Moringa oleifera*	Leaves	Hypertension /High blood pressure
Shal	*Shorea robusta*	Barks	Emission of white fluid with urine
Shimul	*Bombax ceiba*	Thrones	Chicken pox
Shiuli	*Nyctanthes arbor-tristis*	Leaves	Fever
Soot	*Polyalthia longifolia*	Stems	Digestive disorder
Thalkuni	*Centella asiatica*	Leaves	Diabetes

Source: The author.

TABLE 3.1.2 LIST OF ORGANIC MATERIALS FOUND AROUND SUSUNIA HILL USED TO HEAL DISEASE AND ILLNESSES

Vernacular Name	English Name	Usable Parts	Disease and Illnesses
Gorur dudh	Cow milk	Whole	Knee arthritis
Jhinuker khol	Oyster shell	Dry shell	Intestinal worm
Kala nun	Black salt	Whole	Gastritis

Source: The author.

TABLE 3.2.1 LIST OF ETHNOMEDICINAL PLANTS FOUND IN MOUSUNI ISLAND USED TO HEAL DISEASE AND ILLNESSES

Vernacular Name	Scientific Name	Usable Parts	Disease and Illnesses
Atkira	*Not found*	Roots	Diabetes
Harjora	*Cissus quadrangularis*	Stems	Bone fracture
Hijal	*Barringtonia acutangula*	Seeds	Jaundice
Neem	*Azadirachta indica*	Leaves	Intestinal worm
Pan mouri	*Foeniculum vulgare*	Seeds	Gastritis
Thalkuni	*Centella asiatica*	Leaves	Headache, stomach ache
Tulsi	*Ocimum tenuiflorum*	Leaves	Cough and cold

Source: The author.

TABLE 3.2.2 LIST OF ORGANIC MATERIALS FOUND IN MOUSUNI ISLAND USED TO HEAL DISEASE AND ILLNESSES

Vernacular Name	English Name	Usable Parts	Disease and Illnesses
Ghee	Clarified butter	Whole	Diabetes
Gorur dudh	Cow milk	Whole	Headache, jaundice
Modhu	Honey	Whole	Cough and cold
Sorsher tel	Mustard oil	Whole	Cough and cold

Source: The author.

TABLE 4: COMPARATIVE ANALYSIS ON THE ETHNOMEDICINAL USAGES OF MEDICINAL PLANTS AND ORGANIC MATERIALS FOR DISEASE AND ILLNESSES FOUND AROUND SUSUNIA HILL AND MOUSUNI ISLAND

Sl. No.	Disease and Illnesses	Diagnosis Symptoms	Treatment around Susunia Hill			Treatment in Mousuni Island		
			Medicines	Intake Process	Dosage	Medicines	Intake Process	Dosage
1	Bone fracture	Continuous pain, limping, deformity	Stems of *Dadhilata*	Paste is applied and bandaged for 6-7 days, then again bandaged until recovery.	4 times/ 4 weeks	*Stems of Harjora*	Paste is applied and bandaged with repetition for 3-4 weeks.	3-4 times/ 3-4 weeks
2	Chicken pox	Blister like rashes all over the skin, continuous itching	Thrones of *Shimul*	Paste is taken before breakfast	1 tsp/ 5-7 days	*No information on ethnomedicinal practices.*		
3	Cold and cough	Sneezing, coughing, headache	Leaves of *Basak* and *Dhuruntori*	Mixed juice is taken before breakfast or with a cup of tea in the evening	½ cup/ 5-6 days	*Leaves of Tulsi, honey, mustard oil*	Paste of *Tulsi* leaves mixed with honey is taken before breakfast along with mustard oil massage on foot, palm and chest.	3 tsp per day/ 2-3 days
4	Diabetes	Weight loss, fatigue, excessive thirst and urination	Leaves of *Thalkuni* and *Kulekhara,* Sugarcane	Mixture of the juices of mentioned ingredients is taken before breakfast.	½ cup/ 45 days	*Roots of Atkira, Ghee*	Root paste mixed with ghee is taken before breakfast.	1 tsp/ 7 days

5	Digestive disorder	Nausea, vomiting, stomach load	*Adakheta* plant, *Jowain, Soot*	Dried mixed dust is taken before breakfast	1 tsp/ day	*No information on ethnomedicinal practices.*		
6	Emission of white vaginal fluid with urine	White thick fluid emission with urine	Barks of *Shal,* Water	Dust of *Shal* barks mixed with water is taken before breakfast	1 tsp/ day till cure	*No information on ethnomedicinal practices.*		
7	Fever	Headache, high temperature, body, and joint pain, shivering	Leaves of *Shiuli*	Juice is taken orally before breakfast	1 cup /5-6 days	*No information on ethnomedicinal practices.*		
8	Gastritis	Nausea, stomach ache	Leaves of *Bel,* Ginger, Black pepper, Black salt, Water	Paste of all ingredients mixed with water is taken orally before breakfast.	1 glass/ 2-3 days	*Pan mouri*	Dripped into water the whole night and taken on the next morning before breakfast.	1 glass/ 3-4 days
9	Headache	Vertigo, pain in the head	Leaves of *Panjut* and *Ghritakumari,* Roots of *Machkuda*	Dried tablets are made from mixed paste are taken after breakfast.	1 tab/ 5 days	Leaves of *Thalkuni,* Cow milk	Paste of *Thalkuni* leaves mixed with cow milk applied and pasted on the forehead for 30 minutes.	1 time/ day till cure
10	Hypertension/ High blood pressure	Vertigo, headache	Leaves of *Sajne*	*Sajne* leaves boiled in water for 15 minutes then drink the boiled water after removing the leaves before breakfast.	1 cup/ 5-7 days	*No information on ethnomedicinal practices.*		

11	Intestinal worm	Abdominal pain, irritation on anus opening	Leaves of *Kalmegh, Chirota, Jhinuk*	Paste of the mixture of *Kalmegh*, *Chirota,* and dry *Jhinuk* shell is taken before breakfast.	1 tsp/ day	Leaves of *Neem*	Juice is taken before breakfast.	1 cup/ 3 days
12	Itching	Irritation on skin, rashes	Leaves of *Kalmegh*	Juice is taken before breakfast.	½ cup/ 3-4 days	*No information on ethnomedicinal practices.*		

Sl. No.	Disease and Illnesses	Diagnosis Symptoms	Treatment around Susunia Hill			Treatment in Mousuni Island		
			Medicines	Intake Process	Dosage	Medicines	Intake Process	Dosage
13	Jaundice	Yellowish nails, eyes and skin, digestive disorder, body heating	Roots of *Chirota*	A garland made of *Chirota* roots puts on the head and it automatically will come out from the foot covering the whole body.	Till cure	Seeds of *Hijal,* Cow milk	Paste of *Hijal* seeds mixed with raw cow milk is taken before breakfast.	1 cup/ day till cure
14	Knee arthritis	Painful sensations on knee joints	Roots of *Majurjhuti,* Cow milk	Paste of *Majhurjhuti* roots mixed with raw cow milk is taken after dinner.	1 glass/ day till cure	***No information on ethnomedicinal practices.***		
15	Stomachache	Pain in the stomach, eating disorder	Leaves of *Kalmegh*	Juice is taken before breakfast.	1 cup/ 3-4 days	Leaves of *Thalkuni*	Juice is taken when pain.	1-2 times/ day

Source: The author.

OBSERVATION AND DISCUSSION

This study has a number of observations but at the outset, it should state that the cultural tradition and modernity as implied in this context is very much relative and is continuously vibrating between indigenous knowledge system and sustainable development. (Posey, 1997) In regard to the present-day social-cultural dimensions of health, it is no exception. Health problems do create obstacles for development. An example may be cited from amongst the tribal communities living in remote localities away from modern health care facilities, who do rely on the ethnomedicinal plant-based health care system for ages. For Torri and Herrmann, rural communities depend heavily on natural resources for their livelihood. Long-term sustainable use of such resources as water and forests is based on local people's indigenous knowledge and management. (Torri and Herrmann, 2011) The Santals, like any other tribe, possess indigenous knowledge to address health-oriented attributes. Their knowledge system helps them to identify different diseases and illnesses together with traditional healing practices that were transmitted orally over the generations. They have learned and shared the knowledge with their offspring, siblings, or primary kins, which have been transmitted to their successors over the generations. This knowledge-sharing process is the key component in ethnomedicinal practices. The practice matches the concept formulation of the WHO which talks of traditional medicinal knowledge as, "the sum total of knowledge and practices, whether explicable or not, used in the diagnosis, prevention, and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observations handed down from generation to generation, whether in oral or in written form. (WHO, 2015)

It has been observed that the majority of people worldwide rely mainly on traditional, largely herbal medicine to meet their primary health care needs. (Shengji Pei, 2001) Hamilton stated, that the ecological premise of a community contributes to acquiring knowledge on medicinal herbs which cures almost every disease and illness as in some Asian and African countries, 80% of the population depend on traditional medicine for primary health care. Globally, approximately 85% of traditional medicines used for primary health care are derived from plants. (Hamilton, 2004) Plants have a major role as a medicinal resource causing a healthy society. The Santals do possess knowledge about different types of medicinal plants in form of herbs, shrubs, and trees that survives in a diverse ecology and are used by a particular community be it traditional or migratory. The present study has documented 22 medicinal plants and 3 organic materials to cure prevailing diseases around Susunia hill, and 7 medicinal plants and 4 organic materials have medicinal usage in Mousuni island. The knowledge of locally available medicinal plants is the key to public health as the local people have experimentally gained knowledge about their medicinal properties. To transform a plant into medicine, one has to know the correct species, its location, the proper time of collection (some plants

are poisonous in certain seasons), the solvent to use (cold, warm, or boiling water; alcohol, the addition of salt, etc.), the way to prepare it (time and conditions to be left on the solvent), and finally posology (route of administration, dosage). (Elisabetsky, 1991) When a community after residing in a cultural area for centuries migrates to a new one, acclimatization, acculturation, and assimilation become the order of the day. These new developments are particularly applicable for ethnomedicines and other variables of social-cultural dimensions of health. The aforesaid situation became observable amongst the Santal migrants of Mousuni Island.

The ecologies of Susunia and Mousuni are very different. Susunia is a hill-centric dry zone and Mousuni is river based wet zone. Accordingly, the floral distribution with its medicinal properties also varies. In their age-old setting around Susunia hill, the Santals acquired indigenous knowledge of medicinal plants from their forefathers but, after migrating to Mousuni Island, they were unable to continue their age-old practice and wisdom due to the non-availability of many of their known medicinal plants in this altered ecological setting.

Comparing the usage of medicinal plants around Susunia hill and Mousuni Island as evident from Tables 3.1 and 3.2, it can be said that, a garland of *Chirota (Swertia chirayita)* roots and a paste of *Hijal (Barringtonia acutangula)* seeds mixed with cow milk are prescribed to cure jaundice in Susunia hill and Mousuni island respectively. Similar usage is seen for the stem-paste of *Dadhilata (Wedelia trilobata)* and *Harjora (Cissus quadrangularis)* which treats bone fracture. The differences are also observed for diabetes, intestinal worm, jaundice, etc. These differences reveal the fact that for the same disease, usage of medicinal plants varies in two different ecological settings which substantiates the theoretical argument in the present study. Further, it is interesting to observe that juice made of *Kalmegh (Andrographis paniculate)* leaves is prescribed and used by the Santals to cure stomachache in Susunia hill but surprisingly not in Mousuni Island despite its availability where the migrants consume the juice made of *Thalkuni (Centella asiatica)* leaves to cure stomachache, and the idea of *Thalkuni* leaves is borrowed from other ethnic communities residing in the island which represents acculturation of medicinal knowledge that overlaps indigenous knowledge of Santals. The traditional Santals from Susunia have faith in herbal components like tubers, leaves, barks, fruits, flowers, meat, etc. prescribed by their traditional healer. Initially, they resorted to traditional treatment for mostly all types of disease and illnesses but takes allopathic and homeopathic treatment if the traditional healer fails to cure them. The Santals after migrating to Mousuni Island counted about one and a half percent of the total population in the area which included Santal traditional healers who are able to address the health issues with indigenous knowledge continuing their tradition. The limited knowledge on indigenous medication has made the Santal migrants follow the Moulabi and Ojha (Muslim and Hindu's traditional healer cum magician respectively) prescribed treatments in this altered ecological setting.

CONCLUSION

The study reveals that the treatment practices are somehow different amongst the Santal settlements in the two studied settings, where cultural ecology plays a pivotal role in the man-environment relationship. As the environment limits its resources for a human or community can access, has produced a great impact on treatment practices based on medicinal plants which are ecologically determined. Also, the scattered and minimal settlement of Santal migrants of Mousuni Island residing among the multi-ethnic communities away from its traditional hailing place induced conflicts and compromises on the indigenous knowledge system, and eco-spatial shift forced them to renovate and develop their age-old treatment practices in the light of modernity and change.

To conclude the present study, it should state that, the treatment practices are widely dispersed and constructed by communities across the world more particularly based on ecology and its given environment. The spatial shift through migration of Santals induced environmental changes which make differences in environmental features from its age-old hailing place to a new spatial settlement. This change along with different attributes in the controlling variables namely economy, and cultural traits which are key to sustainability and change for a healthy life of the Santals. The study has shown that the Santal migrants of Mousuni Island have acclimatized and acculturated in the new environment. Further, the globalized modern medical system has a considerable impact in building their thoughts on the way of treatment. They avail the benefits of modern treatment and have restricted their traditional practices to a minimum. The availability, accessibility, and affordability of allopathic treatment in Mousuni Island have helped the Santals to develop faith in this new type of treatment.

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