Ethnographic Fieldwork of Santal Pharmacopoeia: Challenges and Negotiation in the Fieldwork

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ABSTRACT: The authors chose to investigate Santal pharmacopoeia in the Dumka district of Jharkhand State because Santal tribe has rich pharmacopoeia, including roots, leaves, bark, fruits, the stem of medicinal plants, animal products, and organic substances. The authors designed the interview schedule and translated it into Santali, which was easy to comprehend and use in the field. Since the first author is well-versed in the Santali language, communication was straight forward. The authors used observation technique and conducted many interview sessions with medicine men and medicine women, patients, and elderly villagers after obtaining consent from each participant. The authors also made use of case studies and life history in her research. Since the study area was on medicinal plants, the authors also collected 200 medicinal plants and used them in the herbarium samples for future reference. The author consulted Prof. Jha and a lab technician from the Department of Botany, Sidho Kanhu University Dumka, Jharkhand, to identify the plant species which was collected from the field that are of great medicinal value. The purpose of writing this paper is to illuminate the young aspiring researcher about how different tools and techniques are sharply applied to gather information from the fieldwork.

INTRODUCTION

Many anthropologists agree that one year is the standard duration for conducting research in a field site for the first time—twelve uninterrupted months of in-residence, rigorous observation and interaction, and speaking the local languages. If long-term research is not possible, a series of shorter rapid assessments can generate credible data, and sustained data collection may include the participation of resident study participants. Without the principal investigator, this would constitute participatory research that assures the recording of seasonal, epidemiological, sociocultural, and other continuities and discontinuities that influence the use of medicinal plants. Botanists and pharmacologists are more likely to be interested in rapid assessment than conventional in-depth ethnography. They will want to take advantage of these characteristics of quick assessment techniques, for example, participatory, including local partners such as healers and government health aids, a sampling of representative sectors such as medicine men, mothers and other household members responsible for home— or self-care, and focus on cultural patterning rather than

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intracultural complexity, to discern commonly used plants and patterns of plant collection, management, preparation, administration, and assessment of medicinal efficacy and resource management (Etkin and Ticktin, 2003).

Ethnography accounts for the journey of any researcher who wishes to add nuances of his difficulty, pleasure, and emotions during his encounter with a new study environment. Ethnography educates researchers to develop the quality of empathy, and they gradually build strong connections with the people they wish to study. The authors chose to investigate Santal pharmacopoeia in the Dumka district of Jharkhand State because they have rich pharmacopoeia, including roots, leaves, bark, fruits, the stem of medicinal plants, animal products, and organic substances. Before going for fieldwork, the authors had to organize a few things in advance and prepare good reading materials from reputed journals about the life of Santal and their relationship with the plant world. What questions need to be asked and who will be the key resource person must be well-planned before conducting the field study. The authors prepared the interview schedule and translated it into Santali, making it easy to comprehend and use in the field. Communication was accessible for the first author since she was well-versed in the Santali language. The reading material from the book of Bodding (1927) and the research articles of Etkin (1988) a renowned ethnopharmacologist, injected many ideas into their cranial capacity to carry out research questions and design suitable research proposals. Over one year, the first author has also developed a sense of belongingness with the Santal community during her doctoral thesis under Prof. P.C. Joshi, the second author, who was her supervisor from 2004 to 2005 at the Department of Anthropology, University of Delhi. Santal medicine has always fascinated the first author since her childhood days. At the beginning of the fieldwork journey, it was exciting for the first author to know that she would be studying her own community about their indigenous medical knowledge system. The first author has always witnessed medicinal plants used as medicine in her family. During her childhood, days researcher saw her aunt, mother's elder sister, Marango, using a specific paste of the leaves of *Psidium guajava* L. around the boils. At such a tender age, the author did not realize the importance of herbal medicine. Gradually, when she grew up, author could understand how Santal people try to cure diseases with herbs. The first author joined the Department of Anthropology for her M.Sc. Degree course in 2002. In the final year, there was a paper called Medical Anthropology (Foster and Barbara, 1978) which captivated her thoughts about the different disease concepts and therapeutic measures used by indigenous people. Students were asked to present a report on the different therapeutic measures used by various tribes. The author opted to work on Santal medical practices, and therefore she submitted a small piece of work on the uses of medicinal plants. With this mindset, she began her journey to research on Santal community focusing on their plant world. On the first day of her interaction with the supervisor, she was to prepare a synopsis of the topic she wished to work on. The very next step was to go to the library to find out few reading materials from journals that had published good articles related to her topic. This is the first step every researcher must follow to get good information about what the researcher wants to study, which way to proceed, how, and why to study. She gathered information from Anthropological journals and successfully discovered the significant contribution made by a renowned anthropologist on plant medicine (Hembrom, 1991). With this idea in mind, the author took a great interest in working on ethnopharmacological knowledge about the Santal during her Ph.D. work. After the final submission of the synopsis, to the supervisor, she conducted fieldwork for Ph.D. thesis from the Department of Anthropology, University of Delhi, from 2004 to 2005. There is a saying, "Knowledge always pays you back," because the first author had a botany background during graduation, she was qualified to carry out Ph.D. research on medicinal plants.

The authors selected Santal because they have rich pharmacopoeia, including roots, leaves, bark, fruits, the stem of medicinal plants, animal products, and organic substances. Santal believes in mixing different varieties of plants to prepare medicine because they think the medicine will be more effective and will help to develop a robust immune system. With such a wide variety of plant knowledge of Santal,

it gave the authors an impetus to research Santal pharmacopoeia, which the authors were completely unaware of.

Anthropologists play a vital role in studying medicinal plants in the traditional environment. They look at plants as cultural entities. In Etkin's opinion, plants must be seen not only as a biological product of a given phytochemical composition but also as articles of culture which carry ascribed meaning that guide their utilization in various biosocial contexts (Etkin, 1988). Anthropologists not only try to document the indigenous floral wealth of the people but also try to interpret the meaning of the plants holistically. Anthropologists study plants' relationship with human beings. How does human being perceive plants? What are all the things they learn while interacting with the plants? How do they classify medicinal and non-medicinal plants? What criteria do people follow to classify potent medicinal plants? Thus, anthropologists play an essential role in understanding the ascribed meaning of the plant world given by different societies. Renowned anthropologists (Bernardi,1980) used an anthropological approach to study the problem of plants in traditional medicine. He concludes by saying that plants should be examined at an existential level to recognize the validity of customary information on natural phenomena, particularly the plant's effects in treating illness and disease. Medicine or medicinal plants can thus be seen as Azande see them, as a product of man's work.

Etkin and Ross (1982) have studied the adaptive significance of plant utilization by the Hausa population. Investigating the multi-dimensional aspect of plant use focuses on the botanical dimension, a constituent of the local diet and herbal pharmacopoeia. The therapeutic system of the Hausa community attributes healing properties to these plants, especially for treating intestinal disorders. They wish to see evidence that the disease leaves the body. Consistent with these expectations, therapeutic measures frequently include the medicine prescription, which is expected to function as laxative diuretics, emetics, sudorific and expectorants. Hausa medicine includes preparation in the form of an infusion, decoction or raw mixture of various plant parts selected from a broad range of herbaceous species. A nutritional analysis of medicinal flora revealed that 53 plant species utilized as gastrointestinal medicine were also used as dietary constituents. These plants are consumed as snacks and supplements to the grain and non-grain-based dishes served during the three daily meals. A few examples of plants are *Acacia arabica* leaves which are added to the food for diarrhea, and *Allium cepa*, chewed as an expectorant for stomachache and to reduce nausea; thus, the possible therapeutic efficacy of these plants was examined with reference to phytochemical constituent analysis reported in pharmacologic literature and to consideration of known infections and other disease processes.

Etkin (2001) tried to focus on the lack of clarification in each research objective and suggests that ethnopharmacologist of all backgrounds can enhance their work by projecting pharmacologic data against a backdrop of medical ethnography and by enriching cultural interpretation of medical actions and exploring the physiologic potential of plants.

Bodding (1927) in his book has immensely contributed to Santal medicines. He has given a detailed account of the treatment of various diseases from plant medicine, and the course of administration and the application of medicine is very well documented. At length, he has tried to understand the psyche of Santal people towards the encounter of disease, their ideas of the origin and causation of disease, and their superstitious beliefs and fears, their attempts to appear and satisfy the malevolent power supposed to be responsible for the condition, the encounter of professional medicine man especially the *Ojha* whose magic and religious whack are explored in great details. His work further illustrates how Santal acts when any disease is thought to have become a matter of public concern. He has documented medicinal plants used in treating different diseases with scientific name and vernacular names, mode of preparation and administration of medicine. After gaining information from the above potent literature review, the author could comprehend and push herself to visit Santal village in the Dumka district to conduct her fieldwork.

MATERIALS & METHODS

Rapport Formation

Rapport formation is a very crucial part of any research. It is like 'breaking the ice' to start interaction with strangers. When you 'break the ice', you become multi-tasking and start observing things, like a person's attitude, style of talking, and gestures. All minute details of his action are captured in your memory, and you become skillful over time in catching the nuances a person emits during an intense conversation. Rapport establishment is very important to establish a friendly relationship with the informants. Since the author was to interview a medicine man and woman, she used this concept so that they would develop faith in her. Being friendly is not at all difficult. Still, on the author's first visit to Santal village, Bandorjori, the author accompanied her uncle John Soren and aunt who acted as an influencer to fix her first interview with the medicine man. They were the key informants in the research. They introduced the researcher to the medicine man, and then the researcher started asking a few relevant questions which she had prepared beforehand about the different types of medicine and different ailments which the medicine man was able to cure. Some basic questions include where and under whose apprentice he excelled in medicinal knowledge and the duration of his practice as a full-fledged practitioner. Such general conversation was carried out on the author's first visit to the medicine man. In a short time, the author was able to make him comfortable where he could speak and convey his ideas about making a choice to become a medicine man. Medicine man earned a prestigious position in the village. Here author must confess that her aunt fixed the initial interview. These initial interviews snowballed and helped the author to other prospective respondents. During the author's intervention, she did not sound alien to the medicine man. The author was well versed with their language and she used Santali language throughout her conversation. The next day, the author prepared herself and went alone to the medicine man to collect more valuable information about the Santal medical system. On her second visit, the medicine man strictly denied saying, "*ran jaruram kan khan in do in emama, baen lai dareama chilka ran in benao da*" ("If you want medicine for yourself, I am ready to give. Still, I cannot tell you how I have prepared medicine"). His response frustrated the author, but she kept sitting for almost three hours to pester him with different questions about his knowledge of the plant world. The author tried to convince him, saying, "I am not here to learn medicine and treat people and have no interest in competing with you. I am only here to document the medicine for my studies". He said the author must pay a visiting charge of Rs. 10 for every visit. His nominal charge to every patient is Rs. 20, since the researcher was not his patient, the medicine man can be offered the local toddy known as '*handi*' of Rs.10 for every visit. Santal believes that if someone greets a person with local toddy, it is a sign of great respect where people express and connect with others freely. He gave the researcher some information that day, but it was difficult. After going to the field for a few days and knocking on every door of the medicine man, the author realized that they had maintained a secret knowledge that they didn't share with outsiders. Some of the medicine men said, "taking the names of the plants will reduce the efficacy of the medicine". Few explained that they do not talk about medicine to the women folk because they believe that women always make mistakes. They can't concentrate due to household chores, requiring sharp memory to learn about medicine. One of the medicine men, whom the author called '*Haramba*', i.e. grandpa, expressed his feelings and said, I could not talk to women about medicine, and I don't pass any information about how to prepare medicine to any alcoholic person because a person misuses the knowledge; therefore, the medical knowledge is secret not open for common folk to learn.

Initially, most of the medicine men looked at the author as an outsider; some of them had an impression that the author was highly educated and might sell their knowledge to the middleman who practices as a quack on the outskirts of the village. Despite telling them her surname 'Murmu,' they wouldn't believe her that the researcher is a Santal and one of them. There were moments of frustration when the author had difficulty taking out relevant information about the preparation of medicine from the medicine man. She recalled an incident where one of the medicine

men pointed out discernment when the author was focusing on taking notes on her notepad, he stopped her and said if you write down about medicine, people will come to know that such a simple plant which grows in their courtyard can prove effective in curing diseases. In that case, people will lose faith in the medicinal properties of plants, and nobody will come to them in future. Therefore, the idea was to keep the medical knowledge secret. After going to the field for almost three months, the author felt that the medicine man behaved indifferently towards her. They would not talk to the author about their secret knowledge, which pushed her into a higher level of vexation. The author out of frustration called the supervisor, the second author, and cried, telling him she wanted to change the topic of her research. It had been three months, and people didn't speak. The second author counselled the first author and told her to be a little patient and that time would come when people would talk. The first author took a small break for 7 days, and then she met one of her known distant relatives with her mother. The author's mother introduced her to Siril Soren, who is supposed to be like Grandpa's age, so she called him Grandpa.

Siril Soren had a rich source of knowledge about medicinal plants and had treated more than 1,000 patients so far. When the author met him, he was in a phase of retirement, which means he does not make medicine; he is no longer a regular practitioner. He sounded more optimistic and agreed to talk and share his immense experience with the author about the patients he treated and diseases he could cure. The author was a little hopeful after meeting this medicine man. She made an appointment for the next day, and he agreed to spare some time. The author shared her worries and nervousness in her heart; she told him it was so important for her to write a thesis and that she also wished to learn about medicinal knowledge. She asked him whether he would train her because, by now, she realized that just interviewing and observing would not help her to understand the cultural construction of efficacy of a particular plant species which is deeply embedded in Santal culture for that she must learn to identify the plants and the context of cultural amplification about their plant world. The researcher convinced him with her flowery words and told him how precious he is to the Santal community, that he should make best use of his knowledge for the development of the Santal community, and that he must also share his secret knowledge with his family members and a few responsible people from Santal community who can carry the legacy of curing people with medicinal plants. The author also told him that if he accepted her as his pupil, she would learn and give back services to society in future. The author also questioned him about how he could forget his duty towards society and not share his knowledge for the betterment of the people. How can he die such a selfish death? The author's prompt way of emotional expression must have created a deep impact in his heart, and finally, he agreed to teach her on one condition that she should never misuse medical knowledge. The author took 3 months of short training under him.

The next day, the author's fieldwork journey began as a pupil of Siril Soren. She took a local bus from Dumka bus stand and went to a village called Inderbani, surrounded by a deep jungle. After getting down, both had to walk miles in the jungle to reach the village of Inderbani. On her way, he showed her a few medicinal plants and asked the author to learn to identify them. Once the author sees it, she should always remember the shape and size of the leaves of the plants. Santal has a very good memory, and they are greatly observant. They don't forget things easily if they have seen and memorized them hard. It was author's testing period while returning from Inderbani village; the medicine man asked her to identify the plant species correctly and tell him about the properties of identified plants. Eventually, the author passed an oral exam that day, and this way, the author's new journey began as a student of a medicine man. The author also clicked a photograph, and with the help of a video recorder, she could record the minute details about whatever the medicine man shared with her. On the way to the forest, the researcher captured candid moments with herbal plants. He shared one secret fact with her, "there are few medicines made out of elephant excreta, cow's urine, and human excreta. If such detailed knowledge is openly discussed with the general public, it will be difficult for people to gulp down the medicine". He also elaborated on some factual details about transferring knowledge of herbs to an apprentice as a

sacred act. During the training, both the master and the students should not consume alcohol. Siril Soren strictly denies teaching a person who is habituated to drinking. He says, "*nu hor do ran ko baric ja*" (a habitual drunk person will spoil the medicine). He further stated that such a person would also charge a high amount from the patient. The role of an herbalist or medicine man is viewed as a sacred job, so he does not charge any money from people who take the treatment. Taking payment for the services is considered a sin. Preparation and administration of medicine always require special prayers by the medicine man. They also seek blessings from the Almighty because they believe God has created plants and medicine man should serve the people for a good cause. The knowledge of herbs is a closely guarded secret not revealed to others. '*Raranic*' (medicine man) is a person who knows the use and dispensation of herbal medicine. *Raranic* will not disclose his secret to *diku* (outsiders) because the medicine man believes outsiders might misuse their age-old traditional knowledge.

Interview

It is the most important tool of research. One cannot do away with this technique while conducting fieldwork. Depending on the study context, the fieldworker has to combine various techniques and methods. One may also have to improvise new techniques and processes or significantly contribute to the existing toolkit (Srivastava, 2015). Young (1973) points out that interviewing may be seen as an effective, informal, verbal conversation initiated for specific purposes and focused on certain planned content areas. Though the interview guide was prepared to provide a roadmap to the author while interviewing, the author resorted to structured types of interviews in an open-ended fashion (Etkin, 1993). The informants were questioned according to the discussions prepared by the authors. They were asked what kind of remedies they use from plant medicine and for what type of disorders. A detailed explanation of their way of treatment was enquired. Interviews were conducted with informants at the same place to avoid a false record. According to the convenience of the herbalist, interviews were carried out in the herbalist's house or in '*manjhi*' a place mostly at the centre of the village, where elderly people sit and discuss their problems and occasionally in the courtyard or inside the house of the informant or with the village headman. Each remedy was well documented in detail, including the vernacular name of the origin of the (plant, animal, organic, substance), mode of preparation, application dosage of medicine, duration of the medication, symptoms of disease etc. It is noteworthy to mention here that all interviews were recorded. The author took the help of the recorder in order to record the exact words of the respondents. The recording helped the authors to catch hold of the nuances and pauses of a respondent, which is a valuable source of information and helped the authors interpret their entire pharmacopoeia.

Observation

Researchers in ethnopharmacology are advised to enter the community at a leisurely pace, especially as current sensitivities about biopiracy make us suspect in many parts of the globe. It is helpful to visit on several short-spaced occasions, first to introduce oneself and explain objectives to the whole community, then to establish research permission, and finally to organise the logistics of moving in and setting up residence. Participant observation is engaged from the first introduction to the community and continues throughout the research and it is still an important component of the research. Meaningful contexts for participant observation in ethnopharmacological research include joining the activities of plant collectors and medicine preparers; overhearing discussions about illness and health; and resource management; attending routine preventive, diagnostic, and therapeutic events—including self-treatment—as well as formal healing ceremonies. These varieties of experiential observation assist the researcher in achieving a depth of insight that typically is not accomplished through interviews about abstract matters (Etkin and Ticktin, 2003).

Careful observation is an intrinsic tool of an anthropologist. A good observer manages to collect more data. Observation means seeing and perceiving what one sees in a relevant context. Observation is an important tool for any research that every investigator tries to apply from day one of the fieldwork. Much ethnopharmacology research has reproduced the

biomedical paradigm in seeking information from indigenous healers, midwives, and other specialists. Although these individuals are knowledgeable, they are relevant for certain disease prevention and therapy contexts. Researchers have carefully made observations of the people's culture about how people greet each other when they meet any stranger. If you visit any Santal house, the first thing that they do, they will get your water in a brass jar and place it in front of you on the ground and welcome you. They have a typical greeting process called '*doboc johar*'. If anyone greets them back, they feel very happy to welcome the person in their midst. The process of Santal greeting is a vital sign of whether people in the village accept you as their own and whether they will help you to conduct your research smoothly.

Initially, the author had a callous time finding a place in people's hearts, but gradually, when people started trusting me, she was welcomed, and people proved helpful. In the study, participant observation was mostly used, which helped the author to precisely understand Santal's indigenous knowledge. Participant observation helped the author to find out how people are cured. How medicine is prepared. How do herbalists try to diagnose the patient etc.? The author observed patients who visited the Medicine man clinic from nearby cities and towns, and they waited for their turns to be examined by the practitioner. Researchers have encountered the fear and worries of patients seeking medical assistance as a last resort after failing to be cured by the alternative medical sources available in big towns and cities. During the study, most patients were suffering from diabetes, high blood pressure, gastric problems, and jaundice, and they would be in a queue with their medical reports from the MBBS doctors. There was a typical relationship which the author observed when she was assisting the medicine man in his clinic. The medicine man will touch and feel the patient's pulse and counsel the patient for at least half an hour. This act of touch therapy worked miraculously in the patient's life. They would start talking freely about their disease, which helps the medicine man make the correct diagnosis of their ailment. In one of the observations at the medicine man clinic, the author saw a variety of medicinal plant parts stored in an open wooden box, and this area would function like a dispensary. After visiting the medicine man, patients will carry a slip of paper to the dispensary, managed by a few skilled herbalists. Sometimes, they can be hired laborers who grind the medicinal plant parts into powdered form and hand it to the patients. The author also noticed a considerable fireplace where the bark of Indian Redwood (*Soymida febrifuge)* '*raket ruhin chaal*' was boiling in a huge container. The decoction turned out to be blood red, and every patient who came to the dispensary with a prescription was given one cup of decoction to drink on the spot. By this time, the author had known the importance of the medicine boiling in front of her eyes. She also consumed one cup of decoction, which gave me a relaxing effect. This tonic is an immunity booster and blood purifier in Santal herbal medication. The medicine man starts his day every morning by sipping a cup of this tonic instead of black tea. Primarily the medicinal plant parts are used in a dried form which is easy to store and consume.

RESULTS

Case Study

Case studies and life histories were also collected from my informants. Yin (2009) defines a case study as an empirical inquiry investigating a phenomenon in its real-life context. Multiple data collection methods are used during case study research, as they involve an in-depth study of a phenomenon. It must be noted, as highlighted by Yin (2009) that a case study is not a method of data collection but rather a research strategy or design to study a social unit. Creswell (2014) defines a case study strategy as lucid and comprehensive. Case Studies are a qualitative design in which the researcher explores in depth a program, event, activity, process, or one or more individuals. The case(s) are bound by time and training, and researchers collect detailed information using a variety of data collection procedures over a sustained period. A case study involves a detailed study of the concerned unit of analysis within its natural setting. A de-contextualised study is irrelevant to case study research (Arya, 2020). A case study is an in-depth study of a few relevant cases compared to a more superficial cross-sectional study of a large sample. The case studies included recounting the experiences of the patient's aetiology, symptoms and the treatment

that the patient underwent. During the investigation, a few case studies also reflected the efficacy of herbal medicine in curing the ailment. According to Srivastava (2015), life history, which tells us about an individual's life experiences, covering all the dimensions, is also an essential tool for collecting detailed information about the healer. How have healers learned to cure diseases, what method and how do they use it? The answer to such queries is well documented when one takes an individual's life history.

At this point, authors would like to discuss one of the case studies of a female herbalist. During her intervention with many experts who were highly sought for immediate help for curing diseases, the first author came across one medicine woman named Esther Soren, age 63, from village Gidhni, District Dumka. At present, she is a retired school teacher. She is a very popular practitioner who often deals with pneumonia (*kala dabha*) and rickety (*puni*). She is a child specialist. At a very young age, when she was 12 years old, her father asked her to assist him in medicine preparation. She did not start with a learning habit. It was because of her father who kept her engaged in grinding medicinal herbs to make a fine paste out of it. Her job was to crush the herbs and give them to her father. Later on, she also had to prepare small tablets out of the herbal paste in the size of a marble and sometimes in the size of a peppercorn, which had to be dried in the sun. Slowly and gradually, with experience, she could identify the plants; this way, she learned to use plant medicine. Her father, Mahesh John Soren, was a specialist in curing epilepsy (*Mirgi Rog*). Initially, she started to learn about the medication for epilepsy. Her father asked her to get five little insects of the cricket variety *Gryllus monstrosus*, which she would find in the river sand, along with tobacco leaf, a part of brinjal roots, the shrub of *Scoparia dulcis* (*chini ghas*). She first made paste out of the ingredients except for tobacco leaf. After that, she will divide the paste into two halves. She will add the tobacco leaf paste to one part of the paste, ground it finely, and mix it with 250 gm of mustard oil. This medicinal oil is used for massaging the whole body. From the second half of the medicine, seven drops of liquid are squeezed out and directly administered into the nostrils of the epileptic patient. She witnesses that after inhaling the medicine, the patient will go to sleep. Santal believes that some worms in the brain cause epilepsy, and some diseases are based on worm theory, i.e., the "*Tejo* theory" found in Santal pharmacopoeia. She has been using this medicine for almost 20 years but now prefers alternative medicine to cure epilepsy. The reason behind this is her old age and no one to assist her in making the medicine which requires much physical labour. She prefers to use alternative medicine, which is less tiresome and easy to make. Medical knowledge is transferred to the next generation. Fathers always train their sons and daughters who are interested in learning. She realised that she was the only child; therefore, she took great care in learning and preserving indigenous knowledge to serve society.

Informed Consent and Research Ethics

Informed consent and research ethics are mandatory requirements to protect the indigenous knowledge of any Indigenous population. Control of their biological and cultural resources weakened appreciably during the colonial and neo-colonial eras. Researchers, national governments, international bodies, indigenous people's organisations, NGOs and other development entities have become more attentive to protecting intellectual property rights (IPR) and sharing benefits and knowledge with local communities in the last two decades. Current legislation that protects IPR is complex, contentious, and inadequate. A substantial literature addresses guidelines for ethical conduct and appropriate compensation to local communities (Etkin,1993). All the participants during the research were well informed about the purpose of the visit, and consent was taken from each participant. They were a little apprehensive about signing the consent form, and convincing them that their name and identity would be kept secret was challenging.

HERBARIUM SPECIMEN

The herbarium is a collection of preserved plant specimens and associated data for scientific study. The specimens may be whole plants or parts, usually in dried form mounted on an exsiccate sheet. Depending upon the material, it may also be stored in boxes or kept in alcohol or other preservatives. The

specimens in herbarium are often used as reference material in describing plant taxa. Some specimens may be describing types.

During the fieldwork, author collected 200 medicinal plants and developed an herbarium. It is a systematic collection of dried plant materials arranged scientifically with their name kingdom, genus, and species. It is a way of correctly identifying plant species and putting on record the existence of a particular plant species, which can be of great medical importance. The collected specimens were taken to Mr. P.P. Hembrom, an ethnobotanist who helped the author verify the plant material as a correct species. Later on, after the author had identified correctly and taken the minute details of the plant, she took the herbarium specimen for submission to the Department of Botany, Sidho Kanhu University, Dumka. The author also consulted Prof. R. N. Jha from the Department of Botany to verify the plant specimen correctly. Here the authors want to mention other vital points considered during the fieldwork: using a field diary to pen down daily field-related activities. This helped the author to keep her mind on the right track and not deviate from the real issues at hand. Photography was also a needed addition. The author used a video recorder camera to record all relevant information during her investigation. The fieldwork also included staying in the forest, which was almost inhabitable without electricity. Night used to be scarier with wild animals visiting her place of stay in close proximity. During rain, snakes used to visit her room many times it was a sleepless night. Sometimes the author wished to leave her work and return to the department but she constantly self-counselled herself, at the same time her parents were very supportive. They also encouraged her from time to time. Finally, after spending one year in the field, the author was able to wind up her work and return to the Department of Anthropology for further data analysis and writing.

Conflict Of Interest: There is no conflict of interest between the authors.

CONCLUSION

This paper is an outcome of the first author's doctoral thesis, which was intended to focus on the ethnographic journey, filled with excitement, worry and fear that the author had to go through during fieldwork. At this point, the author would like to encourage her readers "Once you are an anthropologist, you will always remain an anthropologist throughout your life". Here the author would like to quote Shakespeare's play 'Julius Caesar' one of the characters in the play was 'Cassius' who was known as a great observant. Similarly, Anthropology as a discipline shapes individual personality and holistically develops specific characteristic features of a great observant. The discipline of Anthropology has changed the first author's perceptions, understanding and sensitivity towards her society. The author became much aware of Santal's rich wealth of medical knowledge, their problems and the condition of the Santal community after she stayed with them and studied them in close proximity. The informed consent form was signed by each participant, not revealing their details. Researchers must protect the indigenous knowledge of any Indigenous population they wish to study. Researchers should be more attentive to protecting intellectual property rights (IPR) and sharing benefits and knowledge with local communities, and they should also create awareness among the indigenous population. The researcher must always go back to the fieldwork and share findings with the community to create more awareness about people's health and well-being at the local level. Workshops should be conducted on a regular basis to educate the people on various health schemes and alternative approaches should be developed for community emancipation. Anthropology inculcated a great responsibility and confidence towards knowing culture, which the author was unaware of. The author could see how people live and help each other at the community level. An attempt has been made to study the Santal pharmacopoeia, where plant medicine is one of the indigenous methods Santal has used for ages. The author has conducted fieldwork work in the Dumka district of Jharkhand state. She interviewed 20 herbalists from different villages. While conducting interviews, the researcher routinely asked the informants why this plant was useful as a medicine. Some informants understood the question as referring to the origin of their knowledge about this plant. In other cases, it provoked a response regarding the properties of the plant species. Statements like 'This plant is good against fever because it has cold

properties" or "This plant is good to relieve pain in the body because it has bitter properties" were often given explanations. One of the exciting findings that researchers came to know and learned about is how to treat food poisoning. The bark of *Gemilena arborea* (*Gamhar*) or *Bauhinia purpurea* (*Koenar*) is a very effective medicine for food poisoning. The whole plant is used in the treatment of food poisoning. It is an astringent, bitter, digestive, cardiotonic, diuretic, laxative and pulmonary and nervine tonic. It improves digestion and memory, helps overcome giddiness and helps burn sensation, fever, thirst, emaciation, heart diseases, nervous disorders and piles (Warrier *et al.*, 2021).

Ethnography can be tedious, but it can also be fun if the researcher is interested. Investigators develop lots of patience and confidence strategies and easily don't give up what they have started. Santal has learnt to use different plants as a medicine in their cultural context. They constantly observe the plant parts and try to associate them with the disease symptoms. Slowly with the number of experiments, they have successfully combated diseases. All medicine men and women recognise that they have learnt to use medicinal plants through association with disease. This is expressed as '*besaw ran*'. The medicine employed is mostly the parts of the trees, shrubs, leaves, bark, roots, buds etc. They prepare the medication as a decoction, paste and in the form of pills. In earlier times, healers used to practice with a feeling to help mankind, but now most of the practitioners have become more professional and have started charging their patients for their service. The feeling of developing welfare for the society towards mankind is still alive and is practised by a few healers. One of the author's observations was if a Santal medicine man is trained scientifically with respect to the identification of the medicinal plants, identifications of the disease with symptom diagnosis, treatment and prevention, many lives can be saved as the disease will be checked at the initial stage. There is a need to provide meticulous education to the Santal people in a scientific orientation to preserve their indigenous knowledge system, and people at a mass scale can benefit. The anthropologist must spend sufficient time on the study, be in close contact with the people he is working with, communicate with them solely through their language, and study their entire culture and social life. The author has examined each of these conditions by herself, which has helped to understand Santal's pharmacopoeia through a closer lens.

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