Documentation of Indigenous Medicinal Knowledge of Select Tribal Communities of West Bengal

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ABSTRACT

Indigenous knowledge is a collection of observations, practices, beliefs and written and oral knowledge along with annotations that is developed by indigenous peoples and tribes through their interactions with the environment. The "Indigenous Knowledge" is also known as "Traditional Knowledge" or "Traditional Ecological Knowledge". Indigenous knowledge can be applied to many areas, including biological, physical, social, cultural, economic and spiritual systems. It is based on evidence gained through long-term experiences, direct contact with the environment, extensive observations, lessons and skills. It is a notable point that as indigenous knowledge is tacit and mostly not documented, it is a challenge for the library and information professionals to provide appropriate documentation and preservation of that knowledge. The documentation of tacit knowledge needs special skill and competency. Several initiatives and approaches of libraries and Institutions for the inclusion, documentation and preservation of indigenous knowledge express its value for humankind. This paper presents the documentation of indigenous medicines, medicinal plants and some traditional healing practices prevailing among the Bedia, Koda and Lodha tribes residing in the districts of Bankura and Jhargram of West Bengal. In all, 50 tribal people were surveyed, of which 9, 20 and 21 persons belong to Bedia, Koda or Kora and Lodha communities respectively living in nine villages of Bankura and Jhargram districts.

Keywords: Bedia Tribe-West Bengal, Indigenous Knowledge, Indigenous Medicine, Kora Tribe-West Bengal, Lodha Tribe-West Bengal, Medicinal Plant, Traditional Healing Practice, Traditional Knowledge, Traditional Medicine.

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INDIGENOUS KNOWLEDGE: AN INTRODUCTION

The term *Indigenous Knowledge* (Collins Dictionary, 2024) means, "Information and knowledge about people or things belong to the country in which they are found, rather than coming there or being brought there from another country". The term *Indigenous Knowledge* may also be defined as (Cambridge Online Dictionary, 2024) "Information and knowledge about the people or things that originally lived in a place, rather than people who moved there from somewhere". UNESCO's Local and Indigenous Knowledge programme put forward a very basic and elaborated explanation for the "Indigenous Knowledge", i.e. "Local and Indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For rural and indigenous peoples, local knowledge informs decision-making about fundamental aspects of day-to-day life. This knowledge is integral to a cultural



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complex that also encompasses language, systems of classification, resource use practices, social interactions, ritual and spirituality. These unique ways of knowing are important facets of the world's cultural diversity and provide a foundation for locally appropriate sustainable development" (UNESCO, 2024). Some essential attributes of indigenous knowledge are (Daniel et al, 2022), "Indigenous Knowledge, also referred to as Traditional Knowledge or Traditional Ecological Knowledge is a body of observations, oral and written knowledge, innovations, practices and beliefs that promote sustainability and the responsible stewardship of cultural and natural resources through relationships between humans and their landscapes. Indigenous Knowledge cannot be separated from the people inextricably connected to that knowledge. It applies to phenomena across biological, physical, social, cultural and spiritual systems. Indigenous Peoples have developed their knowledge systems over millennia and continue to do so based on evidence acquired through direct contact with the environment, long-term experiences, extensive observations, lessons and skills".

An analysis of these definitions reveal that the indigenous knowledge is a collection of observations, practices, beliefs

and written and oral knowledge along with annotations that is developed by indigenous peoples and tribes through their interactions with the environment. The "Indigenous Knowledge" is also known as "Traditional Knowledge" or "Traditional Ecological Knowledge". Indigenous knowledge can be applied to many areas, including biological, physical, social, cultural, economic and spiritual systems. It is based on evidence gained through long-term experiences, direct contact with the environment, extensive observations, lessons and skills. The indigenous knowledge can help to promote environmental sustainability and the responsible stewardship of natural resources. It can also reflect and identify a community's cultural and social identity, history and values. For instance, indigenous knowledge can have a significant impact on farming systems. In the first half of the 20th century, indigenous knowledge was the main influence on farming systems while agricultural output was very less.

Indigenous Knowledge and Library

The challenges for LIS professionals begin with the imperative to recognise Indigenous knowledge as a distinct system of knowledge that requires handling and management of knowledge resources that are different from those applied by the Western system of knowledge management. Indigenous knowledge defies stereo-typed definition. Indigenous knowledge is commonly understood as traditional knowledge, although there is debate about whether the term Indigenous knowledge should be used interchangeably with the term traditional knowledge or whether it is more accurately a subset of the traditional knowledge category. Despite contentious terminology, Indigenous knowledge is understood to be the traditional knowledge of Indigenous peoples.

It is a known fact that the indigenous knowledge systems are dynamic and changing as it is orally transmitted from generation to generation and produced in the context of indigenous peoples' close and continuing relationships with their environment. Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience-based knowledge sedimented quasi-statically over centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language and agricultural practices, including the development of plant species and animal breeds. The fundamental nature of traditional knowledge is highly applied and it is very common in the subject-domains like agriculture, fisheries, health and medicine, horticulture, forestry et al. There is an increasing appreciation of the value of traditional knowledge. Many widely used products, such as plant-based medicines and cosmetics are derived from traditional knowledge.

The World Intellectual Property Organization's definition of "Traditional Knowledge" reflects its focus by setting out aspects of knowledge that warrant protection, i.e., "Traditional Knowledge (TK) is knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity. While there is not yet an accepted definition of TK at the international level, it can be said that: TK in a general sense embraces the content of knowledge itself as well as traditional cultural expressions, including distinctive signs and symbols associated with TK, while TK in the narrow sense refers to knowledge as such, in particular the knowledge resulting from intellectual activity in a traditional context and includes know-how, practices, skills and innovations" (WIPO, 2024). It is a notable point that as indigenous knowledge is tacit and mostly not documented, it is a challenge for the library and information professionals to provide appropriate documentation and preservation of that knowledge. The documentation of tacit knowledge needs special skill and competency. Several initiatives and approaches of libraries and Institutions for the inclusion, documentation and preservation of indigenous knowledge express its value for humankind.

The intrinsic component of traditional or indigenous knowledge is 'Culture', which is the characteristic way of life inspired by fundamental values in which people live. It is the sum total of the values expressed through art, religion, literature, social institutions and behaviour (Munshi, 1974). The concepts of Indigenous Knowledge (IK) and culture indicates a common thing that culture and Indigenous Knowledge possess immense value and it has to be preserved scientifically for the future generation and better development before it is lost. Scientific and technical innovations and particularly Information and Communication Technology (ICT) has revolutionised the whole process of preserving, organising and sharing. The multimedia-based digital technology today supports traditional culture to be incorporated with modern and contemporary knowledge systems. The digital technologies offer modern tools and techniques for preservation of Indigenous culture and knowledge. The systematic and coordinated scientific approach is required by the libraries for preservation of IK through modern technologies. It is the librarians that can play a vibrant role in implementing the process of documentation and preservation of IK. Bradford (1953) defined the term Documentation as "The art of collecting, classifying and making readily assessable the records of all kinds of intellectual activities to put before the creative specialist the existing literature, bearing the subjects of his investigation in order that he may be fully made aware of the previous achievements of his genius upon work already done. Documentation is an art of practical necessity practiced by a brotherhood of enthusiastic devotees whose painstaking labour contributes in modest obscurity towards the progress of society". Documentation leads to the preservation, proper use,

enhancement and empowerment of the holders of Traditional and Indigenous Knowledge (Kamboya, 2017).

National Institute of Science Communication and Policy Research (NIScPR) is devoted to dissemination and documentation of Scientific and Technical information. Traditional Knowledge Digital Library (TKDL) is an initiative of India to prevent misappropriation of the country's traditional medicinal knowledge at international patent offices. It is to be noted that more than 70% of the Indian rural population for their healthcare and livelihood depends upon the Indigenous medicinal knowledge (CSIR India, 2024). The project was started in collaboration with CSIR, Ministry of Sc. and Tech. Dept. of Ayush and NIScPR. The project TKDL is engaged in documentation of the traditional Medicinal knowledge in digitized format. It has classified the Indian Medicine system in about 25,000 subgroups for Ayurveda, Unani, Siddha and Yoga. TKDL is based on the 359 books of Indian systems of Medicine in open domain and can be sourced by any individual or organisation at international or national level. This paper presents the documentation of indigenous medicines/ medicinal plants and some traditional healing practices prevailing among the Bedia, Koda and Lodha tribes residing in the districts of Bankura and Jhargram of West Bengal. The documentation has been executed in text, audio and video files, which are preserved.

Literature Review

Sen and Bhakat (2020) discussed on indigenous water use techniques practiced in the lateritic Southwest Bengal along with indigenous methods for water conservation and management like pitcher watering system, bamboo drip irrigation, etc., Ghatak (2015) explained how the social and ecological status of the Lodha tribal people is correlated with that of their age-old "forests of goddess" in the emerging threat of unsustainability syndrome. The growing pressure on land forced these tribes to acquire different skills for maintaining their livelihood. Shaikh (2020) studied the ethno-medicinal plant among the Koch tribe in North Bengal. Basak et al. (2022) dealt with the documentation of medicinal plants and traditional knowledge among the Rajbangshi communities to utilize various plant parts for various health care practices. Sunanda and Ranjan (2011) undertook an ethnobotanical survey to collect information about some indigenous medicines used by the poor people in and around Guskara, a mofussil town in Burdwan district, West Bengal during the period 2004 and 2005. This study showed that many people in this area still continue to depend on these medicinal plants, at least for primary healthcare.

Roy et al. (2022) studied ethno-medicinal plants from Terai zone of Jalpaiguri district. They focussed on the diversity and population status of ethnomedicinal plants in home-gardens and their folk therapeutic uses. Bhadra and Manjunath (2024) studied the traditional medicinal practices used by tribals

in Sona Mukhi Block, Bankura district, West Bengal, which focussed on the use of medicinal herbs. Majumder (2023) carried out the documentation of the existing traditional knowledge of the medicinal plants for bone setting health care practices and analysed the treatment process of ethno-orthopaedic healing system in Gurap area in Hooghly district of West Bengal. Saha (2024) discussed Cobras as sacred beings involved in interactive experiences with humans, amidst changing climatic conditions in the rural areas of Paschim Bardhaman district of West Bengal. This article discussed the human-snake interaction within wider discourse of post-humanist debates. Dey and De (2012) carried out ethnobotanical study among the tribals of Purulia district, West Bengal to explore the traditional use of medicinal plants against fever. Chanda and Mukherjee (2012) carried out an ethnobotanical study in Ayodhya hills of Purulia district in West Bengal, which recorded the indigenous knowledge about non-timber the use of 49 species associated with the ambient tropical dry deciduous forest through an intimate contact with the Paharia tribe. Gorain et al. (2024) identified a few medicinal plants with high success rates in Purulia district, West Bengal. This study revealed that a few plants, such as *Phyllanthus virgatus*, Bryophyllum pinnatum, Vernonia cinerea parts had a high use value of 1.00 and a fidelity level of 100%. Mondal, Gantait and Bhattacharya (2022) investigated the past and present status of usefulness, acceptability, availability and sustainability of ethnomedicine and its economic and ecological impact on local indigenous people in the Jangalmahal areas of Paschim Medinipur and Jhargram districts of West Bengal. The literature review signals a research gap regarding the study of traditional healing practices and medicines among Bedia, Koda and Lodha tribes. This paper presents a documentation of traditional medicinal systems and healing practices among the Bedia, Koda and Lodha tribes of Jhargram and Bankura districts of West Bengal.

The Bedia, Koda and Lodha Tribes of West Bengal

The Bedia is a Scheduled Tribe in West Bengal having a total population of 55,979, which is 1.3% of the total tribal population of the province, as per the 2001 census (Census of India 2001). In 2011, their population grew noticeably to 88,772. The Bedia community is mainly found in the districts of South and North 24 Parganas and Bankura. It is observable that the Bedias show little homogeneity in both economic activities and in social organization (Bandyopadhyay, 2019). The Kora or Koda people live in the three eastern provinces of West Bengal, Orissa and Bihar. The Koras are the fifth largest tribal community in West Bengal. The majority of the Koras in West Bengal are found in the districts of Bardhaman, Purulia, Paschim Medinipur, Birbhum, Bankura and Hugli. Kora seems to be a generic name signifying the occupation of earth digging. They have four endogamous groups: Mudi Kora, Kurmi Kora, Nagbanshi Kora and Dhangar or Orang Kora (Bisai and Bose, 2009). Traditionally, the Lodha people of West Bengal were forest dwellers and were highly

concentrated in Paschim (West) Midnapore and Jhargram district of West Bengal, India. The members of Lodha also can be found in Odisha, Chhattisgarh and Bihar state in India. During the British period, the Lodha's were recognized as a 'criminal tribe.' Forests played an important role in sustaining the livelihood of the Lodha tribe. They collected different forest resources (fruits, honey, mushroom, root, tuber, medicinal plants and other non-timber forest products) and also hunted wild animals. However, during the post-independence period, the Lodhas gradually shifted to settled agriculture with the rehabilitation policy of the government. The Lodha tribe was designated as a 'primitive tribe' by the Dhebar Commission for exhibiting distinguished characteristics such as negative population growth and forest-based livelihood practice. The members of the Lodha community still encounter serious discrimination in getting jobs due to their historical identity of 'criminal tribe' (Majumdar and Chatterjee, 2022).

OBJECTIVES

To present the medicinal plants for curing twelve selected diseases used by the Bedia, Koda and Lodha tribes of Bankura and Jhargram districts.

To present the traditional healing practices for curing twelve selected diseases used by the Bedia, Koda and Lodha tribes of Bankura and Jhargram districts.

SCOPE AND METHODOLOGY

The survey was carried out in the nine villages of Bankura and Jhargram districts of West Bengal, viz. Amrola (Binpur II Block, Jhargram Dist. 3 Persons), Dahijuri (Block and Dist.: Jhargram, 10 Persons), Dainmari (Block and Dist.: Jhargram, 4 Persons), Dedua (Khatra Block, Bankura Dist. 8 Persons), Hensabera (Sarenga Block, Bankura Dist. 1 Person), Majhergora (Khatra Block, Bankura Dist. 4 Persons), Sonagara (Raipur Block, Bankura Dist. 7 Persons), Tilabani (Khatra Block, Bankura Dist. 9 Persons) and Tiyakati (Block and Dist.: Jhargram, 4 Persons). In all, 50 tribal people were surveyed, of which 9, 20 and 21 persons belong to Bedia, Koda or Kora and Lodha communities respectively. The number of persons surveyed in each village are indicated in the adjacent parenthesis of the village names furnished above along with the Blocks and Districts of the respective villages. The ages of the persons surveyed vary from 39 to 91. Of the 50 persons surveyed, the 18 persons were female and the remaining 32 persons were male. The structured questionnaires were prepared for self-reference, but the survey was executed by the interview method. The audio and video recording of the interviews were done. The photographs of the significant spots of the villages and the respective medicinal plants were also taken. Majority of the people found with no formal educational background, except one graduate at Tilabani village, Bankura district. Besides, five persons were found stepping in the primary schools and two

persons in the post-primary schools. The remaining 42 persons have no formal educational background.

Findings

After the detailed survey over few weeks, the traditional medicines and healing practices by Bedia, Koda and Lodha tribes for the following twelve diseases were identified, i.e. 1) Dental problems; 2) Cough, cold and fever; 3) Intestinal disease or Enteric disease; 4) Diabetes; 5) Worm problems; 6) Jaundice; 7) Digestive problems; 8) Vaginal discharge or Leukorrhea; 9) Bone-related problems; 10) Skin-related problems; 11) Eye problem and 12) Snake-bite. The medicinal plants and healing practices are enumerated below. The botanical names of the medicinal plants are given *italicized* in the adjacent parenthesis of the conventional names:

Dental problems

Akanda (*Calotropis gigantean*) leaves are broken and the secreted juice mixed with some salt should be applied to the painful area for a while to reduce the pain.

Dry leaves of Tobacco (*Nicotiana tabacum*) should be broken and placed on the painful area for a while.

Brushing with Veranda (*Jatropha gossypifolia*) leaves and salt reduces toothache.

Veranda (*Jatropha gossypifolia*) root in pasted form should be applied to the root of the tooth.

The leaves and roots of Babla (*Acacia*) (*Vachellia nilotica*) should be powdered and brushed daily.

Teeth should be brushed with a stick of Ramdantan (*Smilax zeylanica*) tree.

Bay leaves (*Cinnamomum tamala*) and cloves (*Syzygium aromaticum*) should be powdered with a small amount of salt and applied to the teeth.

Wash your mouth with lukewarm water with salt.

Cough, Cold and Fever

Basak (*Justicia adhatoda*) leaves should be boiled in hot water and the boiled water should be cooled slightly, to drink at least twice or thrice a day.

Mix 2 or 3 Tulsi leaves (*Osimum canum*) and 1 spoon of honey with it before breakfast.

Crush the leaves of Siuli Leaves (*Nyctanthes arbor-tristis*) and take 1 to 2 spoon-full in the morning on an empty stomach.

In case of cough, chewing *Terminalia chebula* fruit (Haritaki) reduces the cough.

In case of cough, apply lime on the throat.

Swet-Manasa (Euphobia nerrifolia) leaf-extract should be drunk.

Intestinal disease or Enteric disease

Shawll (Shorea robusta) fruit should be chewed 3-4 times a day.

Guava (*Psidium guajava*) leaf juice (1-2 spoons) mixed with some salt should be taken at least 2 to 3 times a day.

Bark of Arjuna (*Terminalia arjuna*) tree should be soaked in water at night and should be consumed before breakfast in the morning.

Chewing the seeds of Shawll (Shorea robusta) plant relieves dysentery.

The roots and shoots of the Chitchiti tree should be mixed with Atab rice to make a paste. Then it should be consumed.

The roots of tar Shushani tree and some quantity of Atab rice should be eaten.

2-3 pieces of Pepper (*Piper nigrum*), dried ginger and roots of house amla tree should be mixed together to make the paste and that paste should be made in pills to consume 3 times a day.

Diabetes or Sugar

White Nayantara (*Catharanthus roseus*) 4-5 leaves and 2-3 flowers should be boiled together in hot water to drink one glass daily or 2-3 Nayantara leaves should be chewed every morning.

Chewing the seeds of *Syzygium cumini* fruit (Black Berry) relieves poly-Uria.

Soak the bark of Pyashal (*Pterocarpus marsupium*) tree at night in water and drink that water on an empty stomach in the morning.

Kalmegh (Andrographis paniculata) leaf juice should be consumed.

Neem leaves and Kalmegh (*Andrographis paniculata*) leaves should be pasted to prepare small tablets and should be consumed separately.

Thankuni leaf juice should be taken on an empty stomach in the morning.

Make a wooden glass of Murga plant and put water in it every day and drink that water in an empty stomach in the morning.

Worm problems

Drinking the juice of pineapple (*Ananas comosus*) leaves on an empty stomach will remove the problem of worms.

Kalmegh (Andrographis paniculata) leaf juice should be consumed.

Kalmegh (*Andrographis paniculata*) leaves should be made into pills and consumed.

Soak light-puffed rice in water and drink that water in the morning on an empty stomach.

Soak the lime overnight and drink the clean water in the morning on an empty stomach.

Date tree (*Phoenix dactylifera*) juice should be taken on an empty stomach.

Date tree bark (*Phoenix dactylifera*) should be eaten.

Dates (*Phoenix dactylifera*) jaggery should be eaten on an empty stomach.

The young part of the stem of the Bota tree (*Ficus benghalensis*) should be chewed.

Jaundice

Tumur (*Cajanus cajan*) leaf juice taken in the morning on an empty stomach for a few days can get rid of this disease.

Drink water with the bark of Kendu (*Diospyros melanoxylon* Roxb) tree.

Banana (*Musa acuminate*) tree trunk should be beaten to drink the juice.

The root juice of a small Shimul tree (*Bombax ceiba*) should be drunk.

The bile of any fish should be cooked.

The buffalo milk Chanas with Chira should be consumed for 1 week.

Digestive problems

Arjuna (Terminalia arjuna) bark cleanses the stomach.

Mix sugar and salt in water and drink it.

Crush the leaves of Thankuni (*Centella asiatica*) and take the juice every morning on an empty stomach.

Papaya (*Carica papaya*) should be boiled and eaten.

Drink tamarind (*Tamarindus indica*) leaf juice on an empty stomach.

Drink the juice of Bel (Aegle marmelos) leaves.

Dumur (Ficus carica) fruit should be chewed.

The water that comes out when the bark of the Shawl (*Shorea robusta*) tree is broken should be drunk.

Vaginal discharge or Leukorrhea

Hibiscus rosa flower (Red Jaba) buds should be chewed 2-3 times in the morning.

Green bananas (*Musa* × *Paradisiacal*) should be cut into small pieces and dried in the sun to make powder and should be consumed in syrup every morning.

Juice of Chaldhwa Shak (leaf), mixed with some amount of sugar should be taken with milk.

The leaves and roots of Pithali tree should be crushed and the juice should be drunk.

Bon (wild) Kundari fruit mixed with sugar beet juice should be drunk.

Bone-related problems

In case of broken hands and feet, the leaves of Harjora tree (*Cissus quadrangularis*) should be pasted to apply to the affected area and to be tied with a cloth to keep for a few days.

The wound should be bandaged with the pasted bark of the Kamaraj tree.

The pasted bark of the Harica tree should be applied to the wound, with a coating of red clay mud on it and to be tied with a cloth.

Skin-related problems

Tulsi (*Osimum canum*) leaf extract should be applied with salt to the ringworm area to reduce it.

Phadashi leaf juice should be applied in ringworm.

Neem (*Azadirachta indica*) leaves are boiled and to be taken bath in that water

Ishwar-Mul root (*Aristolochia indica*) roots should be crushed and the juice extracted to be drunk.

Neem leaves and raw turmeric should be applied to the skin in case of sores.

Apply the juice of Henna leaves on the wound.

Eye problem

Pathorkunchi (Kalanchoe pinnata) leaf juice gets rid of cataracts.

Applying honey to the eyes relieves from infectious eye diseases.

Tulsi leaf should be pasted with camphor and the mixture should be applied to the eyes.

Snake-bite

The leaves of Ishwarmool tree (*Aristolochia indica*) should be eaten with cloves.

To drink the juice of the root of the Golancha tree.

The root of the Shatmul tree should be crushed and the juice should be drunk.

The roots of Bishyala Karani tree, Ishwarmool tree and pepper should be crushed together to be consumed.

The juice of the leaves of the Oleander plant is very effective for snake bites.

CONCLUSION

This paper presents a systematic documentation of traditional indigenous medicinal plants and healing practices used by three tribal communities of western part of West Bengal. The information about the general history, heritage, cultural practices and the general livelihood of these tribal communities is highly scanty and extremely rare. There are unique practices shown by these tribes in day-to-day livelihood. But, the majority of that is not yet documented. The information about these tribes should be properly collected and collated to provide appropriate documentation otherwise the same will pass into oblivion in no time. The libraries have an important role in the documentation and preservation of these indigenous knowledge and culture. This paper presents the medicinal part associated with health-related practices. The study will be further extended in future for the documentation of other characteristic features of these tribal communities.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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