An Ethnozoological Study of Tribes in Nandurbar District, Maharashtra

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ABSTRACT

Human societies have relied on animals for food, clothing, medicine, and cultural practices since ancient times. Ethnozoology, the study of the relationships between humans and animals, offers valuable insights into traditional ecological knowledge and its role in health and conservation. This study documents the ethnozoological practices of tribal communities in Nandurbar district, Maharashtra, during 2021–2022. Data were collected through field surveys, semi-structured interviews, and group discussions with 47 indigenous informants across six talukas. A total of 25 animal species belonging to 18 families were identified as being used in folk medicine and cultural practices. These species were employed to treat a wide range of ailments, including respiratory, musculoskeletal, gastrointestinal, and cardiometabolic disorders. Quantitative ethnobiological indices such as the Informant Consensus Factor (ICF), Fidelity Level (FL%), and Relative Frequency of Citation (RFC) highlighted both culturally consistent and diverse therapeutic uses of animals. The findings reveal the significance of animal-based remedies in traditional healthcare systems and emphasize the need to preserve this knowledge in light of biodiversity conservation and sustainable resource management.

Keywords: Ethnozoology, tribal peoples, medicinal animal, Nandurbar district.

INTRODUCTION

The term ethnozoology first appeared in 1899, as a branch of zoo technology (Mason 1899) and, somewhat later, (Henderson and Harington 1914) referred to ethno:-zoology as the study of existing cultures and their relationship with the animals in their surrounding environment. The massive relationship between animals and human beings is frequently referred to as "Ethnozoology" a branch of science that deals with the study of the total association between indigenous people and animals. It focuses on the direct connection of animals to mankind (Jamir. N. S. and Lal P. 2005). Man's relationship with animals may be for a range of purposes like food, medicine, clothes, and other material needs. As Marques states, "All human culture which presents a structured medical system will utilize animals as medicines" (Marques JGW 1994). The use of animals for medicinal purposes is part of a body of traditional knowledge that is increasingly becoming more relevant to discussions on conservation biology, public health policies, biological prospection with patents, and sustainable management of natural resources (Alves RRN 2015).

Ethnozoology also examines the roles and uses of animals in various cultural practices and rituals for example in some indigenous societies, certain animals are considered sacred and are associated with specific deities or spiritual beliefs. These animals may be protected or revered, and their interaction with humans and governed by strict cultural norms and taboos.

MATERIAL AND METHODS

Study Area: District Nandurbar, a part of the Deccan plateau is situated in the northern part of the Maharashtra State in India. It acquires an area of 4933 Km2 under the latitude between 210 N: :- 21.320 N and longitude 73.340 E :- 74.310E. It lies in the valley of Tapi and Satpuda Mountains. The district can be divided into hilly tracts and undulating plain areas. The hillocks of Satpuda are flat :-topped and plain. The highest elevation is

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recorded at the Toranmal hills rising to 1028 m with a lake on its top. A very small part of the Narmada basin is towards the west. The district is made by Deccan trap. Tapi River and its tributaries pass alluvial soil, while the southern part possesses mountainous gravelly soils. Black cotton soil is very common throughout the district. The climate on the whole is dry except during Southwest monsoons, which begin in June and last from September to October. The average rainfall is 1201.8 mm. The temperature rises in the later part of February, May being the hottest month of the year. The highest temperature recorded is 470 C in May and the lowest is 100 C in December. Relative humidity in the monsoon period is 70% and 25 : :-30 % in other months. The Bhils, Gamits, Gavits, Kokanis, Mavachis, Padvis, Pawaras, Tadvis, Valvisand Vasaves are various ethnic groups of the tribal people dominated in hilly regions of the district. They have their dialect viz. Bhili, Kokani, Mavachi, Pavari etc. In 2011, Nandurbar had a population of 1,648,295 of which male and female were 833,170 and 815,125 respectively. and the remaining 648,198 were females. Nandurbar District population constituted 1.47 percent of the total Maharashtra population. In the 2001 census, this figure for Nandurbar District was 1.35 percent of Maharashtra's population (Census, 2011).

Method

A field survey was carried out from March 2021 to April 2022 by personal interviews through semi : :-structured questionnaires. In some cases where participants were uncomfortable with the questionnaires, informal interviews, and open group discussions were conducted with a total of 47 indigenous respondents (37 male and 10 female) who provided information regarding various medicinal uses of animals and their products (local name of animal, mode of preparation, application etc). (Mendoza 2015)

1. Scientific Name:- ***Apis Indica***

Family:- Apidae

Animal Name :- Modha Makhadha (Local Name) Honey Bee (English Name)

Habit :- Wild / Urban Area

Part Used :- Honey

Medicinal Use :- Cough

Mode of administration :- Honey is orally taken relief from cough.

Hint :- Do not eat or drink anything for an hours after taking honey.

2. Scientific Name :- ***Oecphylla smaragdina***

Family :- Formicidae

Animal Name :- Green Tree ant (English Name)

Habit :- Tropical Regien

Part Use :- Whole Body

Medicinal Use:- Cancer

Mode of administration:- Whole ant is ground in water and prescribed to eat raw.

3. Scientific Name:- ***Periplaneta Americana***

Family :- Blattidae

Animal Name :- Cockroach

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Habit :- Urban area

Part Use :- whole Body

Medicinal Use :- Asthma

Mode of administration :- Washed, boiled with water and make soup consume twice daily.

4. Scientific Name :- ***Barytelphusa cunicularis***

Family :- Gecarcinucidae

Animal Name :- kulee (Local) Crab (English)

Habit :- Wild, Urban area

Part Use :- Whole crab, eyes

Medicinal Use :- Cough, Typhoid

Mode of administration :- Prepared soup with some spices and taken orally about 4 : :-5 days**.**

5) Scientific Name :- ***Labeo rohita***

Family :- Cyprinidea

Animal Name :- Rohu (English)

Habit :- Freshwater

Part Used :- Gall Bladder (Bile)

Medicinal Use :- Intestinal Problem, Gastric Problem.

Mode of administration :- Extract the bile juice from gall bladder mix with water and taken orally for 4-5days.

Hint :- Empty stomach

6. Scientific Name :- ***Nyctibatrachus humayuni***

Family :- Nyctibatrachidae

Animal Name :- Dhabdo(Local) Frog (English)

Habit :- Wild

Part Use :- Whole frog

Medicinal Use :- Asthama, T.B

Mode of administration :- Boiled meat with some spices and consumed Once a week.

7. Scientific Name :- ***Varanus komodoensis***

Family :- Varanidea

Animal Name :- Ghorpad (local) Monitor lizard (English)

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Habit :- wild

Part Use :- Gall Bladder

Medicinal Use :- Snake bite

Mode of administration :- Gallbladder removal and stored in millet then make soup by boiling in water if needed drinking the soup twice daily.

8. Scientific Name :- ***Columba livia***

Family :- Columbidae

Animal Name :- Kabutar (Local) Pigeon (English)

Habit :- Urban area

Part Use :- Blood, Flesh

Medicinal Use :- Joint pain, Asthma, Weakness

Mode of administration :- Fresh blood applied on the affected site for 15- 20 Days twice a Day for Joint pain .Dried flesh is powdered and mix with water, taken orally for 10-15 days twice daily for asthma, weakness.

9. Scientific Name :- ***Passer domesticus***

Family :- Passeridea

Animal Name :- Chidee (Local) house sparrow (English)

Habit :- Urban area

Part Use :- Whole sparrow

Medicinal Use :- Stuttering, Stumble problem

Mode of administration :- Sparrow is grabbed and placed in her full mouth.

10. Scientific Name : :- ***Pavo Cristatus***

Family – Phasianidea

Animal Name : :- Kalaw (Local) Peacock (English)

Habit – wild, urban area

Part Use – Leg, Feather

Medicinal Use : :- Ear problem, Cough

Mode of administration :- Small pieces of peacock leg boiled in oil and oil used for ear problem and used to treat ear problem. The ash of feather is used for cough. Feather is used for decoration and auspicious symbol in homes.

11. Scientific Name :- ***Ardeola grayii***

Family :- Ardeidae

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Animal Name :- Bagla (local) Heron (English)

Habit :- wild

Part Use :- Bon's and leg

Medicinal Use :- If there is any stack in the throat, remove it.

Mode of administration :- Small pieces of leg and bone boiled in water. Boiled water is used to cure intestinal problem.

12. Scientific Name :- ***Bos indicus***

Family :- Bovidae

Animal Name :- Cow (English)

Habit :- Domestic

Part Use :- Urine

Medicinal Use :- Skin disease, Obesity, Hypertension

Mode of administration :- Urine Filtered first and taken orally for 10-15 days**.**

Hint :- Empty Stomach.

13. Scientific Name :- ***Herpestes edwardsi***

Family :- Herpestidae

Animal Name :- Mongoose, Neola

Habit :- wild

Part Use :- Meat

Medicinal Use :- Cancer, Asthma

Mode of administration :- Boiled meat with some spices and make soup take it once a day.

14. Scientific Name :- ***Panthera tigris***

Family :- Felidea

Animal Name :- **Tiger (English)**

Habit :- Wild

Part Use :- Whisker

Medicinal Use :- Cancer treatment

Mode of administration :-

15. Scientific Name :- ***Hystrix indica***

Family :- Hystricidea

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Animal Name :- Poolsuta (local) Porcupine(English)

Habit :- Wild

Part Use :- Quills Flesh

Medicinal Use :- Abdominal Problem, General Weakness

Mode of administration :- Tribal people believe that placing quills in the hands of the pregnant mother during labor reduces labor pains and eases the birth of the baby. Flesh boiled in water and make soup. Flesh dried making powder and this powder mix in water and give children to abdominal problem.

16. Scientific Name :- ***Rucervus* duvaucelii**

Family :- Cervidea

Animal Name :- Hamrahinka, Huvar (Local) Barasingha (English)

Habit:- Wild

Part Use :- Antler

Medicinal Use :- Cough, cold, Chest pain, Pneumonia

Mode of administration :- Powdered, crush in water and applied over the chest for 2-3 days, for twice of day.

17. Scientific Name :- ***Bubalus bubalis***

Family :- Bovidea

Animal Name :- Mhaisa, Padli (Local) Buffalo (English)

Habit :- Domestic

Part Use :- Horn

Medicinal Use :- Menstrual pain

Mode of administration :- After buring of buffalo horn the Ash is mixed with water, then they give water to drink twice a day for five days.

18. Scientific Name :- ***Axis axis***

Family :- Cervidae

Animal Name :- Fukhadi (local) Chital (English)

Habit :- Wild

Part Use :- Bones, Leg

Medicinal Use :- Chikungunya.

Mode of administration :- Small pieces of leg and bone is boiled in water. Then they give water to drink twice a day for 4-5 days.

19. **Scientific Name :-** ***Capra Hircus***

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Family :- Bovidea

Animal Name :- Bokadi (Local) Goat (English)

Habit :- Domestic

Part Use :- Milk

Medicinal Use :- Skin Problem

Mode of administration :- Drink the milk and raw milk is applied directly on the skin.

20. Scientific Name :- ***Hyaena hyaena***

Family :- Hyaenidea

Animal Name :- Todshya (Local) Hyana (English)

Habit :- Wild

Part Use :- Meat

Medicinal use :- Joint pain

Mode of administration :- Extraction of oil from fat the oil is used for joint pain.

21. Scientific name :- ***Sus scrofa***

Family :- Suidae

Animal Name :- sukar (Local) Pig (English)

Habit :- Urban area

Part Use :- Meat

Medicinal Use :- Joint pain, the arms and legs are bent used to straighten it.

Mode of administration :- Extraction of oil from fat the oil is used for joint pain.

22. Scientific Name :- ***Melursus ursinus***

Family :- Ursidae

Animal Name :- Asano (Local) Sloth bear (English)

Habit :- Wild

Part Use :- Meat, bone

Medicinal Use :- Fracture

Mode of Administration :- Boiled meat with some spices and make soup take it once a day.

23. Scientific Name :- ***Semnopithecus Entellus***

Family :- Cercopithecidea

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Animal Name :- Langur, Hanuman Monkey (Local) monkey (English)

Habit :- Wild

Part Use :- Meat, lung

Medicinal Use :- Pneumonia

Mode of administration :- Boiled meat with some spices and make soup take it once a day. Burning the bone and make ash ,ash mix with water and taken orally.

24. Scientific Name :- ***Antilope cervicapra***

Family :- Bovidae

Animal Name :- Haran (Local) Blackbuck (English)

Habit :- Wild

Part Use :- Antlers

Medicinal Use :- Used for piercing the nose of bulls.

25. Scientific Name :- ***Bos taurus***

Family :- Bovidea

Animal Name :- Bail (local) Ox (English)

Habit :- Domestic

Part Use :- Outer skin

Use :- Making drums used in death rituals.

Mode of administration :- Remove bull skin, dry, polish, after dry then use it.

RESULTS AND DISCUSSION

The inhabitants of villages surrounding the forest areas have a strong belief and knowledge regarding the source and use of traditional medicine. They use different plants, animals, and animal byproducts to cure different ailments in their indigenous ways. The knowledge regarding traditional medicine is usually confined to the local medicinal practitioners popularly known as Bhagat, Maharaj, Vaidya, and Suin. Demographic information of the respondents was collected through face-to-face interaction. The age of the respondents varied from 20 to 80 years (Table no.1). The study recorded a total of 18 families, 25genera, and 25 species of animals which were used to treat 25 different disease conditions. Systematic enumeration summarizes the Scientific name, family, local name, English name, parts used, preparation of medicine, administration of medicine, and hint, the parts or byproduct of the species used to treat the disease(s) or ailment(s). These animal species belonged to both vertebrates (21 species) and invertebrates (04 species) (Table no. 2). The use of several animals and animal derived drugs by different ethnic communities to treat different diseases has also been reported from different geographical regions in India. A total of 15 different animal species were reported to be used for therapeutic purposes by the Mogya, Bawaria, and Meena communities of Rajasthan (Maheshwari and Jorolli, 2006). About 26 animal species were reported to be used by the Naga tribe of Nagaland (Jamir and Lal, 2005) and 48different animals were recorded and documented to be used for different ethnomedicinal purposes among the Karbis of Assam (Verma AK et al., 2014).

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Table no.1 Demographic Details of respondent:

Characteristics of respondent	Number	Frequency
Gender		
Female	**37**	78.72
Male	10	21.27
Age		
20-35	14	29.78
36-50	15	31.91
51-65	15	31.91
66-80	03	6.38

Table no. 2. Number of Animal categories being used and their frequency in zoo based therapeutic methods among the traditional healers in Nandurbar District.

Invertebrate			Vertebrate		
Phylum	**Number**	**Frequency**	**Phylum**	**Number**	**Frequency**
Arthropoda	04	16 %	**Pisces**	01	04 %
			Amphibia	01	04 %
			Reptile	02	08 %
			Aves	03	12 %
			Mammals	14	56 %

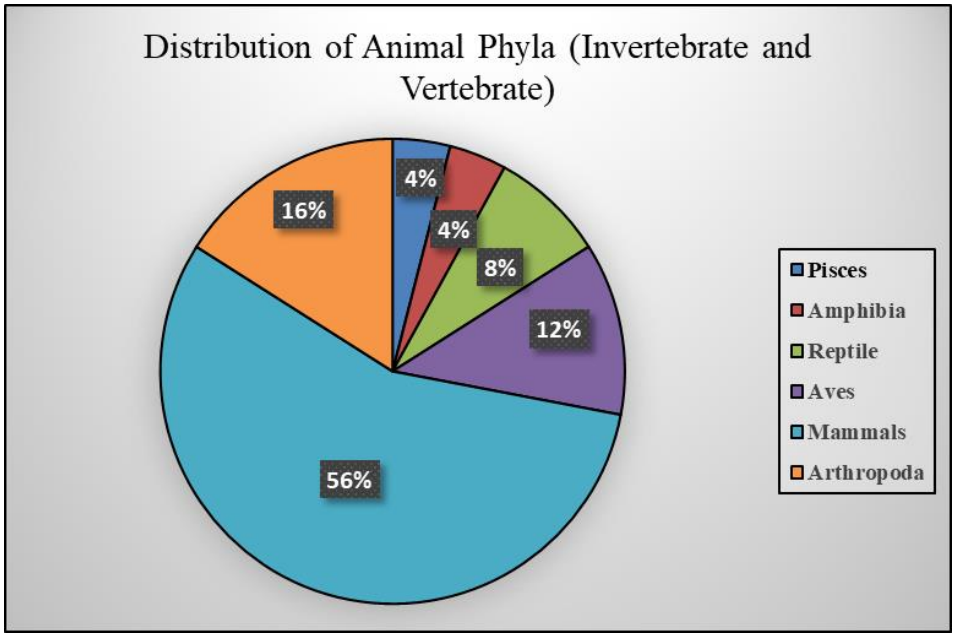

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Table no. 3. Ethnozoological practices in the preparation of animals and their parts.

Mode of administration	Number	Frequency
Raw	8	32
Boiled/ Soup	6	24
Cooked	3	12
Ash	3	12
Oil Extract	3	12
Paste	2	8
Cultural Use of animal parts	2	8

The data outlines different ways animal parts are utilized, highlighting the number of uses and their frequencies. The raw form stands out as the most frequently reported, with 8 distinct uses and a frequency of 32. Raw consumption of animals and their parts in different zoo based threptic purpose is common practice among different ethnic communities worldwide (Vijaykumar et al. 2015 and ,Kim et al 2013) . Following closely are boiled or soup preparations, noted 6 times with a frequency of 24. Other methods include cooked forms, ash, and oil extract—each reported with 3 uses and a frequency of 12. Additionally, both the paste form and cultural applications were mentioned twice, each having a frequency of 8. This suggests that while raw and boiled forms dominate, there is a variety of other methods being utilized, including cultural practices and processed options like ash and oil extract.

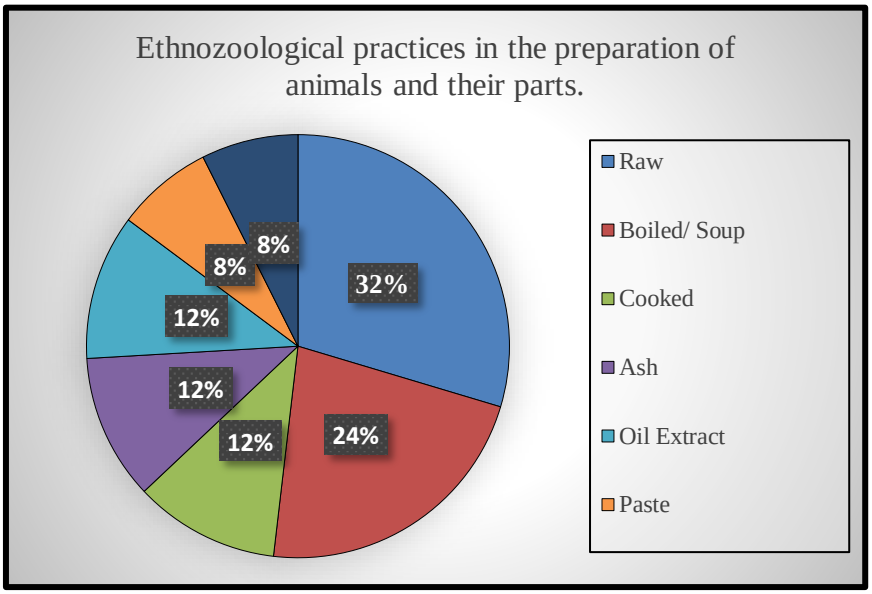

Table no. 4 Distribution of application modes.

Mode of application	Number	Frequency
Oral	18	72
Topical	05	20
Cultural Significance	02	08

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Data analysis

Microsoft Excel spreadsheets were used to clean, enter, and analyses data. Descriptive statistics were employed to examine quantitative data. The faithfulness level (Tugume et al. 2016), informants consensus factor (Uddin and Hassan 2014), and use-values (Vitalini et al. 2013) were calculated from the obtained data using the formula below.

Informant Consensus Factor (ICF): ICF = (Nur-Nt)/(Nur-1)

Where Nur is the number of use reports from informants for a single animal-use category, and Nt denotes the total number of taxa or species used by all informants in that category. The ICF values range from 0 to 1, with '1' being the highest level of informant consent.

Table No. 5. Informant consensus factor for the common indicators that the medicinal animals and animal products employed by traditional medical practitioners and Indigenous people.

Ailment Category	Nur (Use-Reports)	Nt (Taxa)	ICF
Cardiometabolic	2	1	1
Respiratory	13	9	0.333
Gastrointestinal	5	4	0.25
Musculoskeletal	5	4	0.25
Cancer	3	3	0
Dermatological	2	2	0
ENT / speech	3	3	0
Envenomation	1	1	0
Febrile / infectious	1	1	0
General weakness / nutritional	2	2	0
Reproductive / obstetric	2	2	0

The examination of the Informant Consensus Factor (ICF) across various categories of ailments showed significant differences in the level of agreement among informants. Cardiometabolic disorders had the highest level of consensus (ICF = 1.0), with two reports of use pertaining to a single taxon, indicating that the knowledge about treatments in this category is notably consistent and culturally trustworthy. In contrast, respiratory issues garnered the greatest number of use-reports (Nur = 13) spread across nine taxa, but displayed only a moderate level of consensus (ICF = 0.333). This suggests that while respiratory conditions are well acknowledged and treated, informants tend to use a wide variety of plant species, reflecting both the cultural significance of this category and the diversity of treatment preferences. Gastrointestinal and musculoskeletal conditions each had five use-reports and four taxa, resulting in low consensus values (ICF = 0.25), which indicates limited agreement among informants regarding the selection of plants. On the other hand, categories such as cancer, dermatological, ENT/speech, envenomation, febrile/infectious, general weakness/nutritional, and reproductive/obstetric disorders all recorded ICF values of 0.0. This suggests that for these categories, each report of use was linked to a different species, indicating fragmented or individualized ethnomedicinal knowledge without a shared agreement. In summary, the results emphasize that while some ailments like respiratory conditions receive considerable ethnomedicinal focus, only a select few categories, such as cardiometabolic disorders, show strong

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cultural consistency in plant utilization. These trends align with earlier ethnobotanical research, where high ICF values are seen as indicative of well-established, culturally passed-down knowledge, whereas low values typically reflect either novel uses of plants or divided knowledge systems (Heinrich et al., 1998; Trotter & Logan, 1986; Andrade-Cetto & Heinrich, 2011).

Fidelity Level (FL): FL (%)= N_p / N x 100

Where:

- **Np** = number of use-reports for a given ailment (primary use)
- **N** = total use-reports for that species

Table no. 6. Ethnozoological Species, Use-Reports, and Fidelity Levels (FL%) in Traditional Medicine.

Sr.no	Scientific Name	Common Name	Total Use Reports	Primary Category	Fl% (Use-Report-Based)
1.	Rucervus Duvaucelii	Barasingha	4	Respiratory	100
2.	Labeo Rohita	Rohu	2	Gastrointestinal	100
3.	Nyctibatrachus Humayuni	Frog	2	Respiratory	100
4.	Sus Scrofa (Local Pig)	Pig	2	Musculoskeletal	100
5.	Apis Indica	Honey Bee	1	Respiratory	100
6.	Axis Axis	Chital	1	Febrile / Infectious	100
7.	Bubalus Bubalis	Buffalo	1	Reproductive / Obstetric	100
8.	Capra Hircus	Goat	1	Dermatological	100
9.	Hyaena Hyaena	Hyaena	1	Musculoskeletal	100
10.	Melursus Ursinus	Sloth Bear	1	Musculoskeletal	100
11.	Oecophylla Smaragdina	Green Tree Ant	1	Cancer	100
12.	Panthera Tigris	Tiger	1	Cancer	100
13.	Passer Domesticus	House Sparrow	1	Ent / Speech	100
14.	Periplaneta Americana		1	Respiratory	100
15.	Semnopithecus Entellus	Langur (Hanuman Monkey)	1	Respiratory	100
16.	Varanus (Monitor Lizard)	Monitor Lizard	1	Envenomation	100
17.	Bos Indicus	Cow	3	Cardiometabolic	66.7
18.	Ardeola Grayii	Heron	2	Ent / Speech	50

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19.	Barytelphusa Cunicularis	Crab	2	Respiratory	50
20.	Herpestes Edwardsi	Mongoose	2	Cancer	50
21.	Pavo Cristatus	Peacock	2	Ent / Speech	50
22.	Columba Livia	Pigeon	3	Musculoskeletal	33.3
23.	Hystrix Indica	Porcupine	3	Gastrointestinal	33.3

The examination of Fidelity Level (FL%) showed significant differences in the ethnomedicinal value of various animal species. Most taxa (e.g., Rucervus duvaucelii, Labeo rohita, Sus scrofa, Apis indica, Panthera tigris, among others) had an FL of 100%, indicating a highly specialized and culturally consistent application for a specific category of ailments. This exclusivity implies that these species are deeply rooted in traditional health practices, and their treatments are viewed as reliable and effective by local populations (Alves & Rosa, 2007; Mishra et al., 2010). Conversely, a smaller group of species showed moderate FL scores, like Bos indicus (66.7%), Ardeola grayii (50%), and Hystrix indica (33.3%), reflecting their versatile roles in treating various conditions. This diversity illustrates the evolving nature of ethnomedicinal knowledge, where certain species are limited to very specific therapeutic uses while others are more adaptable, being utilized in multiple treatment scenarios (Alves, 2012; Sajem & Gosai, 2006). Notably, species linked to culturally sensitive or life-threatening health issues—such as Varanus (envenomation), Axis axis (febrile and infectious diseases), and Bubalus bubalis (reproductive/obstetric disorders)—highlight the vital role of traditional animal-based remedies in addressing serious health problems (Alves & Albuquerque, 2013; Chakravorty et al., 2011). In summary, the prevalence of species with high fidelity emphasizes the richness of traditional ecological knowledge and the potential for discovering taxa with pharmacological relevance (Alves, 2012; Alves & Rosa, 2006).

Relative Frequency of Citation (RFC): RFC=NF / C

Where:

- **FC =** number of informants mentioning the species
- **N =** total number of informants (47 in this study)

Table no. 7. Relative Frequency of Citation (RFC) of Animal Species Reported by Informants

Scientific Name	Common Name	FC (Number of Informants Citing the Species)	N (Total Informants; From Paper)	RFC = FC / N
Apis Indica	Honey Bee	20	47	0.4255
Oecophylla Smaragdina	Green Tree Ant	2	47	0.0426
Periplaneta Americana	Cockroach	5	47	0.1064
Barytelphusa Cunicularis	Crab	17	47	0.3617
Labeo Rohita	Rohu	6	47	0.1277
Nyctibatrachus Humayuni	Frog	9	47	0.1915
Varanus (Monitor Lizard)	Monitor Lizard	8	47	0.1702

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Columba Livia	Pigeon	30	47	0.6383
Passer Domesticus	House Sparrow	1	47	0.0213
Pavo Cristatus	Peacock	45	47	0.9574
Ardeola Grayii	Heron	9	47	0.1915
Bos Indicus	Cow	47	47	1.0000
Herpestes Edwardsi	Mongoose	16	47	0.3404
Panthera Tigris	Tiger	1	47	0.0213
Hystrix Indica	Porcupine	8	47	0.1702
Rucervus Duvaucelii	Barasingha	6	47	0.1277
Bubalus Bubalis	Buffalo	40	47	0.8511
Axis Axis	Chital	19	47	0.4043
Capra Hircus	Goat	40	47	0.8511
Hyaena Hyaena	Hyaena	4	47	0.0851
Sus Scrofa (Local Pig)	Pig	18	47	0.3830
Melursus Ursinus	Sloth Bear	2	47	0.0426
Semnopithecus Entellus	Langur (Hanuman Monkey)	1	47	0.0213
Antilope Cervicapra	Haran	1	47	0.0213
Bos Taurus	Bail/Ox	1	47	0.0213

This table presents the quantitative ethnobiological data for the animal species observed during the study. Each entry includes the scientific name, common name, frequency of citation (FC: the number of informants mentioning the species), the total number of informants (N = 47), and the derived Relative Frequency of Citation (RFC = FC/N). The RFC index serves as a standardized metric to assess the relative significance of a species within traditional knowledge frameworks (Tardio & Pardo-de-Santayana, 2008). The results indicate that Bos indicus (cow) and Pavo cristatus (peacock) exhibited the highest RFC values (1.0 and 0.957, respectively), highlighting their considerable cultural and practical importance. Additionally, Bubalus bubalis (buffalo) and Capra hircus (goat) also received high scores (RFC = 0.851), emphasizing their vital role in livestock-based economies. Conversely, species that are wild or infrequently encountered, such as Panthera tigris (tiger), Semnopithecus entellus (langur), and Bos taurus (ox), had the lowest RFC values (0.021), indicating limited mentions by informants. These discrepancies illustrate that domesticated and commonly found species are cited more often, thus being culturally more relevant compared to rare, wild, or less accessible species. Therefore, RFC, along with other ethnobiological indices, is a valuable method to assess and compare the significance of animals in traditional ecological knowledge systems (Phillips & Gentry, 1993; Tardio & Pardo-de-Santayana, 2008; Andrade-Cetto & Heinrich, 2011).

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CONCLUSION

This research highlights the rich ethnozoological knowledge possessed by the tribal communities of Nandurbar, illustrating how animals play a vital role in healing practices and act as living repositories of medical wisdom. An inventory comprising 25 animal species and their medicinal applications combines storytelling with quantitative data, showing that these treatments reflect shared memories and address a wide array of physical ailments. Additional metrics—ICF, FL%, and RFC—measure cultural continuity in certain remedies while revealing adaptive changes in others, capturing both the enduring essence and the evolving aspects of tradition. By correlating narrative richness with empirical data, these indices enhance the perspectives of both ethnographers and empirical scientists. The research emphasizes the need to protect the intangible cultural knowledge that informs these zootherapeutic practices. Many of the species mentioned play crucial roles in local ecosystems; hence, sustainable harvesting for therapeutic purposes brings forth the need for careful management that balances cultural, biological, and ethical considerations. Ongoing collaboration and synergy with ecologists and medical researchers could validate the medicinal potentials embedded in these traditions, while the tribal frameworks may offer scalable models for sustainable health practices without harming the ecosystem. Thus, the ethnozoological composition of Nandurbar serves as an interconnected narrative—a pathway through which cultural identity, indigenous medicine, and biodiversity interact systemically. Ensuring the preservation of both this knowledge and the species involved is vital for sustaining ecological equilibrium and addressing the healthcare needs of indigenous populations.

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