

## Research Article

# Ethnozoological Study of Traditional Medicinal Animal Parts and Products Used among Indigenous People of Assosa District, Benishangul-Gumuz, Western Ethiopia

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Traditional medicine is a global practice and depends on locally available natural resources and indigenous knowledge. Animals and their products have been used in the preparation of traditional remedies in various cultures since time immemorial. This study aimed to identify and document traditional medicinal sources from animals and associated indigenous knowledge in Assosa Districts, Benshangul Gumuz region, western Ethiopia, from September 2019 to July 2020 to ensure sustainable utilization of natural resources and biodiversity. A cross-sectional survey design was used to collect ethnozoological information with regard to animals used for medicinal purposes, parts used, ingredients added, ailments treated, method of preparation, mode of administration, dosage and duration of treatment, and the mechanisms of knowledge transfer. A total of 38 animal species were used as medicine to treat over 35 different kinds of human diseases including anatomical, physiological, psychological, and spiritual ailments and veterinary treatment. Over 15 animal species were found to score fidelity level (FL) more than 50%, of which the skin of *Crocota crocota* used for the treatment of evil eye had the highest FL ( $n = 35$ , 92.1%), followed by the blood of *Sus scrofa domestica* for treatment of stomach illness ( $n = 32$ , FL~84.2%), the milk of *Equus asinus* to treat cough and eye disease ( $n = 28$ , FL~73.7%). The study area harbors diverse medicinal animals that represent key medical alternatives for local communities. The documentation of this indigenous knowledge of animal-derived medicine and the practice helps in developing strategies for conservations of biological diversities.

## 1. Introduction

Traditional medicine is the sum total of knowledge, skills, and practices based on the theories, beliefs, and experiences, indigenous to different cultures, which are used to prevent, diagnose, improve, or treat physical and mental illnesses [1, 2]. The traditional medical knowledge of indigenous people across the globe has played an important role in identifying living organisms which are important for treating human health problems and livestock ailments [3]. Traditional medicine is a global practice and depends on locally available natural resources and indigenous

knowledge [4]. It has remained the main alternative treatment in developing countries due to the shortage of pharmaceutical products and their unaffordable prices [5]. Traditional medicines have been found to be an invaluable guide to the screening of important modern medicines and herbal preparations [6, 7]. Traditional medicines are sometimes the only source of therapeutics for nearly 80% of the human population and 90% of livestock in Ethiopia [8].

Indigenous traditional medicines are practiced essentially based on a private agreement between consenting parties, and the knowledge of traditional practice in most cases has descended through oral folklore [9]. Thus, the

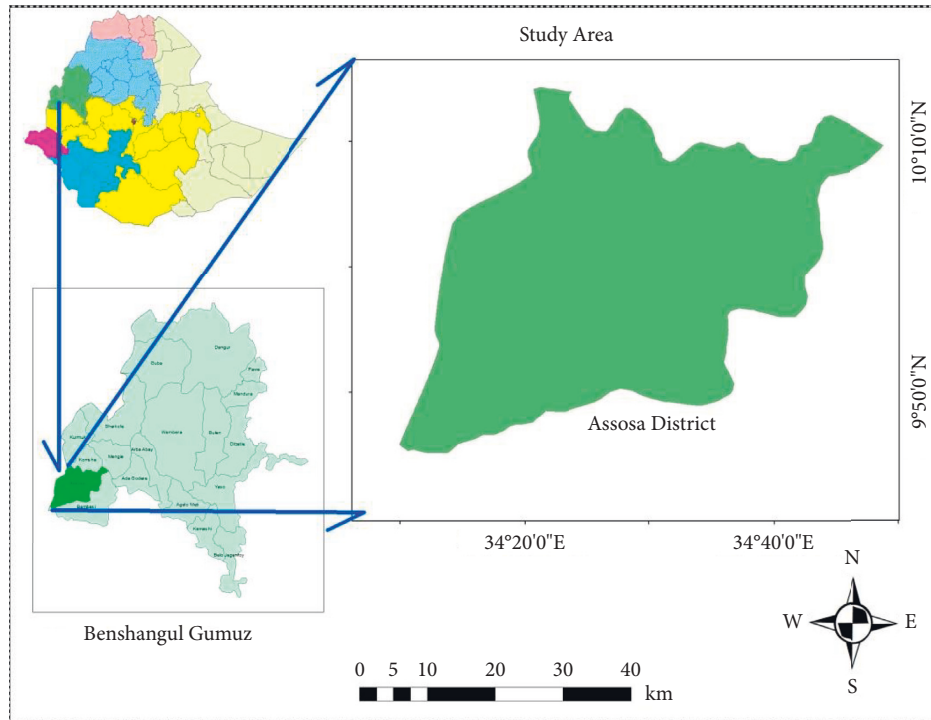


FIGURE 1: Map of the study area.

indigenous knowledge, belief, and practice are time-tested practices that develop and change with time and space in the process of human interaction with their environment and result of long years of experience of generations, careful observation, and trial and error experiments [10]. However, this knowledge can be lost with the death of the knowledgeable elderly persons as different ethnic groups transfer the traditional medicinal knowledge orally from elderly persons from generation to generation [11–13].

Ethnozoological studies can be a valuable asset to increase our understanding of the cultural, economic, social, and traditional roles played by animals [14]. Since time immemorial, animals and their products have been used in the preparation of traditional remedies in various cultures [15]. Wild and domestic animals and their byproducts such as hooves, skins, bones, feathers, and tusks are important ingredients in the preparation of curative, protective, and preventive medicine [16,17]. Thus, ethnozoology is the study of the past and present relationships between animals and human societies including primitive rural and tribal people which records their unique knowledge about animals for the search of new resources of drugs, food, and sociocultural aspects of animals in human life [13,18]. Animal based traditional medicines are considered to be of pertinence since they have been methodically tested by pharmaceutical companies as sources of drugs to the modern medical science [19].

Although Ethiopia is rich in biodiversity resources and traditional knowledge, the rich indigenous knowledge on many of the traditional plant and animal remedies are under threat as it has been mainly conveyed orally along generations without being properly and scientifically documented

[20,21]. Besides, reports about ethnozoology of Ethiopia are still patchy despite the enormous researches being done on ethnobotany [3]. Accordingly, it is indispensable to document the traditional knowledge of human communities to rescue the loss of the communities' socioeconomic and cultural characteristics [22]. Therefore, the study aimed to identify and document traditional medicinal animal parts and products, and associated indigenous knowledge used by traditional healers in Assosa District, Benishangul-Gumuz region, western Ethiopia. The findings of this study will be used to ensure sustainable utilization of natural resources and biodiversity.

## 2. Materials and Methods

*2.1. Description of the Study Area.* The study was conducted at Assosa district which is found in Assosa zone of Benishangul-Gumuz Regional State, Western Ethiopia. The district is bordered by Kumuruk and Homosha in the north; Mao-Komo special District in the south; Oda Buldigilu in the east; and North Sudan in the west. The study area is located at about 687 km west of the Ethiopian capital, Addis Ababa. Geographically, the study area is located between  $10^{\circ}02'44''$  north latitude and  $34^{\circ}32'45''$  east longitude (Figure 1). According to the 2007 National Census, the District has an estimated total population of 104,147. The altitude of the study area ranges from 1590 m to 2731 m asl. The majority of residents of Assosa district depend on rain-fed subsistence agriculture and some are traditional hunter and gatherers. According to the National Meteorological Agency, the rainfall distribution pattern of the area is unimodal and occurs between April and October with an



FIGURE 2: Group discussion with the respondents of the study at Gumba kebele, Assosa District.

average annual rainfall of 1316 mm. The mean annual temperature ranges between 16.75°C and 27.9°C, with the lowest and highest temperatures being recorded in December and February, respectively.

**2.2. Methods.** The researchers implemented cross-sectional descriptive survey design as it is useful in establishing the nature of existing situations and an appropriate technique to collect data on a large number of variables. Key informants from local traditional healers and spiritual intellectuals were selected purposively from the district (38–28 male and 10 female). The selection of respondents was based on their experience and recognition as knowledgeable members concerning traditional zootherapeutics [23,24].

**2.3. Data Collection.** The ethnomedicinal data about the use of animals and their products in traditional medicine were collected using the participatory rural appraisal method (where the informants also sometimes become investigators themselves), semistructured questionnaires interview complemented by informal conversations, informal meetings, and open and group discussions [25–27]. Before commencement of the survey, researchers familiarized themselves to the local people by explaining the nature and objectives of the research and asked the respondents for permission to respect intellectual property rights [28]. During the survey, the following ethnozoological information was collected: the local name of the animal used for medicinal purpose, parts used, ingredients added, ailments treated, method of preparation, mode of administration, dosage and duration of treatment, and the mechanisms of knowledge transfer concerning each of the traditional medicines [26,27,29].

The questionnaire survey was reinforced by conducting a group discussion with 15 selected individuals of the community (Figure 2). The discussion aimed at seeking to understand the traditional medicinal system of the people, animal conservation and management strategies, threats to traditional medicinal animals, the mechanisms of knowledge transfer to future generations, and the influences of modernization on the continuity of traditional medicinal knowledge.

TABLE 1: Sociodemographic profile of the respondents included in the survey ( $n = 38$ ).

Demographic characteristics	No. of respondents	Percentage
<b>Sex</b>		
Male	28	73.7%
Female	10	26.3%
<b>Age group</b>		
35–45	7	18.4%
46–55	6	15.8%
56–65	12	31.6%
>65	13	43.2%
<b>Educational level</b>		
Illiterate	26	68.4%
Literate	12	31.6%
<b>Marital status</b>		
Single	2	5.2%
Married	33	86.8%
Divorced	3	7.8%

**2.4. Data Analysis.** The collected data were summarized, organized, and analyzed using descriptive statistical methods such as percentage and frequency. The results were presented using tools such as tables and graphs.

The fidelity level (FL) was calculated to determine the most commonly used animal species in the treatment of a particular disease category by the informants of the study area. The FL was calculated by the following formula [30]:

$$FL (\%) = N_p \times \frac{100}{N}, \quad (1)$$

where  $N_p$  is the number of informants that claimed use of a specific animal species to treat a particular disease and  $N$  is the total number of informants who utilized the animals as medicine to treat any given disease [25]. The fidelity level ranges from 1 to 100% where high values indicate that a particular animal species is used by a large number of people, while a low value depicts the disagreement of respondents on the usefulness of a species in treating disease [24].

### 3. Results

**3.1. Sociodemographical Characteristics of the Respondents.** The local peoples of Assosa District, Western Ethiopia, use different animals and animal byproducts in their own indigenous system for the curative purpose of different

TABLE 2: Mode of application of traditional medicine.

Mode of application	No. of application	Percentage	Mode of delivery
Anointing	9	13.8	Topical/dermal
Drinking	9	13.8	Oral
Dropping	4	6.2	Topical/dermal
Eating	22	33.8	Oral
Fumigation	4	6.2	Nasal
Massaging	8	12.3	Topical/dermal
Sitting on	1	1.5	Topical/dermal
Tying	8	12.3	Topical/dermal
	65	100	

ailments. The knowledge regarding traditional medicine in the study area is usually confined to the local medicinal practitioners popularly known as “traditional healers/herbalist.” Out of the total 38 respondents, most were older than 45 years (90.6%), married (86.8%) and males (73.7%) (Table 1). A majority of the traditional healers were also illiterate (68.4%). Regarding procurement of traditional knowledge, 18 (47.3%) of respondents acquire their traditional medicinal knowledge from their family, 12 (31.57%) from their own experience, 6 (15.78%) from book readings, particularly religious books, and the rest of 4 (10.52%) from the surrounding societies. The reasons that urged the people to use animals as medicine were their consideration of greater curative potential than modern medicine (21; 56.26%), lack of income to buy modern medicine (7; 18.42%) and the lack of access for modern medicine (hospitalization) (10; 26.31%).

**3.2. Ethnozoological Analysis.** The respondents used a total of 38 animal species to treat over 35 different kinds of human disease conditions including anatomical, physiological, psychological, and spiritual ailments; and for veterinary treatment of the animals used in zotherapeutic purposes; 32 used to treat human diseases; 4 for both human and livestock diseases; and 2 to treat livestock ailments. The mode of application and delivery of these animal-based traditional medicines are described in Table 2. The animal group, common name, local name, scientific name, parts/products of the species used to treat the disease(s), additives/ingredients, and mode of application (like drinking, eating, fumigation, tying) are summarized in Table 3. These animal species belonged to both vertebrates (32 species) and invertebrates (6 species) distributed among five taxonomic groups where mammals occupied the highest number of animals 25 (63.2%), followed by arthropods 5 (10.5%) whereas annelids comprised the lowest range 1 (2.6%) (Figure 3).

**3.3. Mode of Application.** The findings of this study depicted that modes of application/administration of traditional medicine varied depending on the part/product of animals used and type of ailment conditions. The routes of administration of these medications are eating, drinking, chewing, massaging, tying, fumigation, anointing, dropping/

pouring, and sitting on (Table 2). For instance, both solid and liquid remedies were administered orally if applicable otherwise applied to the skin by tying, massaging, anointing, pouring, and others allowed to enter the body by fumigating. From the mentioned 38 animals and 63 animal parts/products, 22 (33.8%) were taken orally by eating, 9 (13.8%) by drinking and anointing, 8 (12.3%) by massaging and tying, 4 (6.2%) by dropping and fumigation, and 1 (1.5%) by sitting on the animal part/product. This showed that about 31 (47.6%) of the mentioned part/product of animals used in traditional medicine were administered orally while the rest 30 (46.2%) were delivered topically (dermal). Out of the total 63 animal parts/products, most ( $n = 54$ , 85.7%) were administered without the addition of additives/ingredients like water, honey, ash, oil, injera, milk, and coffee though few involved the use of water ( $n = 3$ , 4.8%) and oil and honey.

**3.4. Quantitative Analysis.** This study revealed that 15 animal species were found to score FL of more than 50% (Table 3). The skin of *Crocota crocota* used for the treatment of evil eye had the highest FL ( $n = 35$ , 92.1%), followed by the blood of *Sus scrofa domestica* for treatment of stomach illness ( $n = 32$ , FL~84.2%) and the milk of *Equus asinus* to treat cough and eye disease ( $n = 28$ , FL~73.7%). The egg of *Gallus gallus* used for the treatment of cow and donkey disease conditions had FL~71% ( $n = 27$ ), followed by the meat of *Epomophorus labiatus* for treatment of asthma, hepatitis and mental problem ( $n = 25$ , FL~65.8%). The honey of Bee (*Apis mellifera*) used to cure coughing and abdominal pain had the fidelity level 57.9% ( $n = 22$ ). On the other hand, the leg and bile of *Rattus rattus* which is used to treat night mare had the lowest fidelity level ( $n = 5$ , FL~13.2%) (Table 3).

## 4. Discussion

The study revealed that aged groups of the society in Assosa District were more informed and knowledgeable about the uses of animals in traditional medicine than the younger generation. Similar trends were confirmed from previous studies indicating that aged people are more experienced in zotherapeutic practices and they are carrying the knowledge gained from their parents or elderly people of their society [12,13,24,31]. The possible reasons of less involvement of younger generation in traditional medicinal practice could be attributed to the spread of modern

TABLE 3: Medicinal use of animals and animal parts for traditional therapeutic purposes by the peoples of Assosa district and the fidelity level.

Animal group	Common name	Local name	Scientific name	Parts/products used	Ailments treated	Additives used	Mode of application	NR claimed (n/38)	FL (%)
Mammals	Cow	Lam	<i>Bos taurus</i>	Milk	Snake bite and poisoning	None	Drinking (oral)	12	31.6
				Butter	Ear infection	None	Heating and dropping (topical)	16	42.1
	Dog	Wusha	<i>Canis familiaris</i>	Bile	Intestinal illness and cough	Liver	Eating (oral)	9	23.7
				Excreta	Body wounds	None	Massaging (topical)	19	50
				Liver	Rabies	None	Eating (oral)	17	44.7
				Bile	Epilepsy	None	Fumigation (topical)	9	23.7
	Donkey	Ahya	<i>Equus africanus asinus</i>	Milk	Cough and eye illness	None	Drinking (oral) and dropping (topical)	28	73.7
				Leg fat	Breast illness	None	Massaging (topical)	7	18.4
	Hyena	Jib	<i>Crocuta crocuta</i>	Skin	Evil eye	None	Fumigation	35	92.1
				Skin	Facilitate birth delivery	None	Sitting on	7	18.4
Goat	Fiyel	<i>Capra aegagrus hircus</i>	Excreta	Wound healing	Water	Massaging (topical)	19	50	
			Milk	Eye illness and snake bite	None	Drinking (oral)	20	52.6	
			Butter	Ear infection	None	Dropping (topical)	19	50	
Rat	Ayit	<i>Rattus rattus</i>	Horn	Leprosy	Honey	Anointing on body (topical)	14	36.8	
Bat	Yeletit wof	<i>Cynopterus sphinx</i>	Leg and bile	Night mare	None	Tying on neck	5	13.2	
			Meat	Asthma	None	Eating after cooking (oral)	25	65.8	
			Meat	Hepatitis and mental illness	Injera	Eating (oral)	25	65.8	
Porcupine	Jart	<i>Hystrix cristata</i>	Alimentary canal	Premenstrual pain and typhoid	Water	Drinking (oral)	7	18.4	
			Spine	Stomach pain and abscess	Ash, honey	Eating (oral)	24	63.2	
			Meat	Stomach ailment	None	Eating fresh (oral)	24	63.2	
Warthog	Kerkero	<i>Phacochoerus africanus</i>	Teeth	Toothache, wart and rheumatism	None	Heating and massaging (topical)	23	60.5	
			Skin	Herpes	None	Heating and massaging (topical)	9	23.7	
			Horn	Body swellings	None	Heating and massaging (topical)	13	34.2	
Pig	Asama	<i>Sus scrofa domestica</i>	Meat and liver	Stomach and internal illness as whole	None	Eating fresh (oral)	21	55.3	
Cheetah	Aboshemane	<i>Acinonyx jubatus</i>	Blood	Stomachache	None	Drinking (oral)	32	84.2	
Human	Sew	<i>Homo sapiens</i>	Skin	hemorrhage	None	tying (topical)	6	15.8	
Anubis baboon	Tera zinjero	<i>Papio anubis</i>	Urine	Body wounds, bleeding & senselessness	None	Pouring/dropping (topical)	16	42.1	
			Excreta	Toothache	None	Chewing for long time	14	36.8	
Bush duiker	Midaqua	<i>Sylvicapra grimmia</i>	Meat	Joint pain and fracture	None	Eating fresh (oral)	18	47.4	
African buffalo	Goshi	<i>Syncerus caffer</i>	Female genital	Goiter	None	Eating fresh (oral)	7	18.4	
			Nail	Abdominal pain of children	None	Tying (topical)	7	18.4	
			Horn	Abdominal ache	Water	Drinking (oral)	8	21.1	
Leopard	Nebir	<i>Panther pardus</i>	Meat	Impotency	None	Eating fresh (oral)	7	18.4	
Lion	Anbesa	<i>Panther leo</i>	Meat	Impotency	None	Eating fresh (oral)	7	18.4	
			Meat	Impotency	None	Eating fresh (oral)	6	15.8	

TABLE 3: Continued.

Animal group	Common name	Local name	Scientific name	Parts/products used	Ailments treated	Additives used	Mode of application	NR claimed (n/38)	FL (%)
Mammals	Cat	Dimet	<i>Felis domesticus</i>	Skin	Spiritual problems	None	Tying (topical)	9	23.7
	Jackal	Kebero	<i>Canis aureus</i>	Bile of black cat	Visual defect	None	Anointing on eye (topical)	13	34.2
	Hippopotamus	Gumarie	<i>Hippopotamus amphibius</i>	Liver	Mental disorder or illness	None	Eating (oral)	17	44.7
	Rabbit	Tinchel	<i>Lepus fagani</i>	Skin	Donkey illness	None	Heating and massaging (topical)	19	50
	Hyrax	Shikoko	<i>Procavia capensis</i>	Meat	Common cold	None	Eating after cooking (oral)	6	15.8
	Camel	Gimel	<i>Camelus dromedarius</i>	Fat and skin	Wart, cow and donkey illness	None	Anointing and fumigation (topical)	15	39.5
	Grivet Monkey	tota	<i>Chlorocebus aethiops</i>	Whole body	Children retarded growth	None	Eating fresh (oral)	6	15.8
	Crow	Kura	<i>Corvus splendens</i>	Milk	Migraine	None	Drinking (oral)	19	50
	Owl	Gugut	<i>Strix aluco</i>	Meat	common cold	None	eating (oral)	7	18.4
	Hen	Doro	<i>Gallus gallus</i>	Leg bone	Goiter	None	Tying (topical)	7	18.4
Birds	Hen	Doro	<i>Gallus gallus</i>	Meat	Enhance intelligence	None	Eating (oral)	21	55.3
	Pigeon	Rigib	<i>Columba livia</i>	Beak	Evil attack	None	Tying (topical)	9	23.7
	Lizard	Enshilalit	<i>Iguana iguana</i>	Egg	Cow and donkey disease	None	Drinking fresh (oral)	27	71.1
	Python	Zendo	<i>Python sebal</i>	Whole meat	Fracture and body damage	None	Eating (oral)	20	52.6
	Tortoise	Eli	<i>Testudo graeca</i>	Chicken	Snake bite	None	Tying (topical)	21	55.3
	Chameleon	Esist	<i>Chamaeleo chamaeleon</i>	Meat	Mental disorder and heart failure	None	Eating fresh (oral)	18	47.4
	Snake	Ebab	<i>Naja naja</i>	Whole body	Cattle wound	Oil	Anointing (topical)	19	50
	Scorpion	Gint	<i>Palamnaeus swammerdami</i>	Fat	Headache, body disorder & ear infection	None	Fumigation and dropping (topical)	19	50
	Arthropods	Scorpion	Gint	External coats ash	Wart and leprosy	None	Anointing with ash after burning (topical)	7	18.4
	Reptiles	Scorpion	Gint	Whole body	Retarded growth	Oil	Eating after cooking (oral)	7	18.4
Invertebrates	Bee	Neb	<i>Apis mellifera</i>	Blood	Snake bite	None	Drinking soon (oral)	21	55.3
	Bug	Tihuan	<i>Cimex rotundatus</i>	Head part	Evil eye	None	Tying on neck (topical)	12	31.6
	Ticks	Meziger	<i>Dermacentor</i>	Body oil	Burn skin and wart	None	Heating and anointing (topical)	11	28.9
	Leeches	Aliqit	<i>Hirudinea</i>	Meat	Scorpion bite	None	Anointing (topical)	10	26.3
	Arthropods	Bug	Tihuan	Honey	Cough and abdominal pain	None	Eating (oral)	22	57.9
	Arthropods	Bug	Tihuan	Blood	Ringworm	None	Anointing (topical)	17	44.7
	Arthropods	Ticks	Meziger	Blood	Skin illness and fungal disease	None	Anointing (topical)	17	44.7
	Arthropods	Leeches	Aliqit	Head part	Rheumatism	None	Massaging (topical)	7	18.4

NR: no. of respondents; FL: fidelity level.

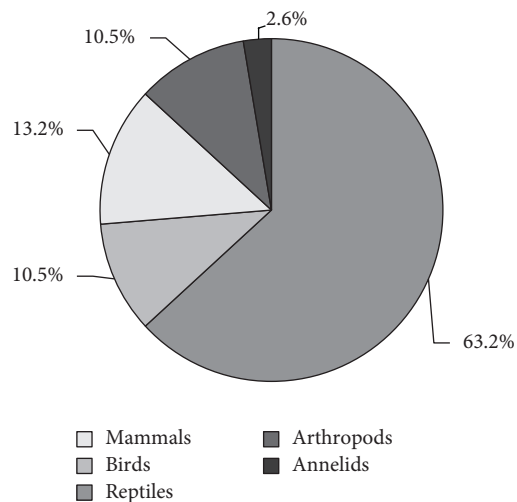


FIGURE 3: Percentage of animal taxonomic groups being used in zootherapeutic practices among the traditional healers of Assosa District.

education, globalization, emigration to nearby towns, consideration of the practice as a backward custom, and assimilation of alien culture.

In this study, 38 animal species were used in traditional medicine to treat over 35 different human and livestock ailments in the Assosa District. This study reveals that in many cases the same animals species were used for the treatment of more than one ailment conditions and vice versa. Previous studies showed that a number of animals and animal-derived remedies are used by different ethnic communities to treat a variety of ailments in different parts of the world [3,12,13,24]. For instance, [24] collected and identified 51 animal species' parts and products that were used to treat over 36 kinds of ailments in northern Ethiopia, while [12] reported 44 species of animals used to treat 40 different diseases in Assam, India. Moreover, 16 species of medicinal animals were collected and identified for treating 18 different human ailments in the Kafta-Humera district of northern Ethiopia [3].

Most of the animals used for ethnozoological therapeutic purposes belong to the classes of mammals, reptiles, birds, arthropods, and annelids. Mammals are the most commonly used animal group as compared to others, possibly they are the most domesticated animal group by the local people of the study area or are abundant in the area. This result indicated that the choice of the remedies depends upon the local accessibility and availability of fauna. Although insects (arthropods) were reported as the most used and easily available remedies and mammals as the second highest zootherapeutic animals [12], arthropods are second important in this study. However, in some reports, mammals are among the main group of animals used in folk medicine [13, 24, 32, 33].

This study showed that animal-based traditional medicine was administrated by eating, drinking, anointing, fumigation, massaging, tying, pouring on the body, and sitting on animal parts. The commonest diseases in the study area were treated by the oral mode of application. Other studies

demonstrated similar aspects of applications/administrations [3,24]. The result of this study depicted that most of the remedy preparation do not need any kind of additives while some of them need various substances to be functional in treating both human and livestock ailments. For example, the spine of porcupine (*Hystrix cristata*) in powder form mixed with honey and anointed to treat abscess.

Fidelity levels (FL) demonstrate the percentage of respondents claiming the use of certain animals for the same ailments [34]. The skin of hyena (*Crocuta crocuta*) used for the treatment of evil eye accounted for the highest fidelity level followed by blood of Pig (*Sus scrota domestica*) to treat stomach problems as a whole. Milk of donkey (*Equus africanus*) for cough and eye disease, the meat of porcupine (*Hystrix cristata*) for stomach problem, the honey of bee (*Apis mellifera*) to treat cough, the skin of rabbit (*Lepus fagani*) to relive wound, and the meat of owl (*Strix aluco*) to increase intelligence (wisdoms), are the well-known traditional remedies for achieving higher fidelity level. Other studies conducted by [24] demonstrated that honey of bee species (*Apis mellifera*) is known to relive wart, asthma, diarrhea, throat pain, stomachache, cough, and tuberculosis and accounted for the highest fidelity level.

Apart from the healing of anatomical and physiological ailments, natural products (plants and animals) often have magical-religious significance, demonstrating the different views of health and diseases exist within various cultures where animal parts are used to prepare clinical remedies and make amulets used in magical/religious diagnoses [33]. In this respect, peoples of Assosa District use amulets containing the beak of an owl (*Strix aluco*), the head of a snake (*Naja naja*), and fumigate skin of *Crocuta crocuta* to protect the user from evil eye or from diseases. For instance, different tribal groups in different countries sacrifice animals for different ritual and religious purposes according to their mythological myths and beliefs associated with therapeutics [13,22,24]. The take-home message of this study is that the Assosa district is endowed with compressed indigenous knowledge of traditional medicinal animal taxa for treating varieties of human and livestock ailments.

## 5. Conclusion

Although this study is pioneer in documenting the traditional zootherapeutic practice and knowledge among the indigenous peoples of Assosa District, the results reveal that the area has diverse medicinal animals that are being used to treat various human and livestock ailment conditions. Zootherapeutic practice in the area represents a key medical alternative for local communities. This could also helpful in generating awareness with regard to the necessity for conservation, preservation, and sustainable use of biological diversity before the resource is jeopardized forever. Currently, medicinal animal availability is at risk due to anthropogenic activities such as agricultural expansion, hunting, and over utilization of the animal resource. And also, a number of threats that erode indigenous knowledge emanate from secrecy, oral-based knowledge transfer, reluctance of younger generations to gain knowledge,

unavailability of species, influence of modern education, and assimilation of alien culture. Thus, this study provides a platform for further scientific validation of the therapeutic efficacy of various zootherapeutic traditional uses by inhabitants. The documentation of indigenous traditional knowledge of animal-derived medicine and the practice helps in developing strategies for sustainable use and conservation of biological diversity. Because indigenous peoples have extensive knowledge of local environments and their skills and techniques provide valuable information to the global community and useful models for biodiversity policies, as these people are most directly involved with conservation and sustainable use. Moreover, most of these peoples are situated in areas where the vast majority of the world's genetic resources are found. Many of these people have cultivated, domesticated, and used biological diversity in a sustainable way for thousands of years where the practices have been proven to enhance and promote biodiversity and help in maintaining healthy ecosystems.

### Data Availability

All data generated or analyzed during this study are included in this published article.

### Ethical Approval

Permits for this research were issued by the Ethiopian Wildlife Conservation Authority (EWCA), Assosa District Rural Development and Agriculture Office.

### Consent

Informed consent was obtained from all participants before the commencement of the study. All respondents included in the study population are aged 18 and above years old. Accordingly, the researcher did not consent from guardian/parents or other legal representatives.

### Conflicts of Interest

The authors declare that there are no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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