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A survey of the Traditional Medical and Non-medical Uses of Animals Species and Parts of the Indigenous people of Ogbomoso, Oyo State

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Abstract

The rising cost as well as the negative associated adverse effects of orthodox medicines has ultimately resulted in wide acceptance of traditional based medications. The study reports the uses of animal species and parts practised by the people of Ogbomoso, Oyo State. An ethno-zoological survey of the Ogbomoso people of Oyo state (Nigeria) was conducted using an open structured questionnaire. Eighteen Traditional Medical Practitioners (tmpts) and twenty trado-herbal sellers were interviewed. From the survey, 43 animal species were identified as been sold in trado-herbal market serving as a major source of income to the traders with *Chamaeleo senegalensis*, *Bufo regularis*, *Felis silvestris* and *Eidolon helvum* as the most common. Zoo-therapeutic practices of the indigenous people include the use in the treatments of epilepsy, rheumatism, fever, wound healing and non-medicinal uses include protection, command of authority and favour. Further studies are required concerning the conservational status of the animals resources used.

Keywords: ethno-zoology, traditional medicine, trado-herbal sellers, *Leptailurus serval*, zoo-therapy

1. Introduction

The high cost of orthodox preparations; increased occurrence of adverse drug reactions; increased number of hospital admissions (frequency and duration of stay); ready availability of medicinal plants and its relatively low cost has paved way for the documented wide acceptance of traditional/herbal medicinal preparations experienced in the early 21st century. Hence, resulting in the desire for the integration of tradition medicinal practices into the country's health care delivery system [1, 2, 3].

Traditional medicinal has been defined by the World Health Organization (WHO) as the sum total of all the knowledge, skills, and practice-based theories, beliefs and experiences indigenous to various cultures, whether explicable or not, that is used in either the prevention, diagnosis, improvement, treatment of physical and mental illness as well as the maintenance of health [4] and involves the use of both medicinal herbs and/or animal parts.

A vast proportion of the world's population is believed to rely on plant and/or animal-based medicines for the treatment and management of a number of chronic disease conditions. This utilization of animal/animal products in traditional medicinal preparations can be dated to the early 1800s with evidences of its documented use and 8.7% of the indispensable chemicals selected by the World Health Organization were derived from animals [5, 6].

The Ayurvedic system has been reported to contain a number of mammals, reptiles, amphibians and arthropods with documented medicinal properties. In Northeast Brazil, 250 animal species have been documented for the treatment of diverse ailments and 87 mammalian species reported being sold in the traditional medicine market in Benin [7, 8, 9, 10, 11]. The China national corporation of traditional and herbal medicine has documented over 1500 animal species to have some medicinal use in the Materia Medica. Different animals and their products have been documented to be used by various ethnic groups and tribes for treatment of chronic human ailments in present times [8, 9, 12, 13].

The African continent (Nigeria inclusive) is not left out in the use of animals and its by-products in the treatment/management of various disease conditions. In Nigeria, animals and animal products are known to serve as a primary as source of protein and income to herbal sellers, traditional practitioner and hunters. Over 55 fauna species identified were exploited for their zoo-therapeutic properties within the South-western part of Nigeria and 22 animal species have being documented as used in the treatment of various disease conditions in Northern Nigeria [14, 15, 16].

The rising interest of the WHO in alternative medicine; the government's appreciation of the importance of traditional medicine in health care delivery system and the possibility of the

medical integration by the Nigeria Medical Council in country's health care delivery system ^[17], has made it necessary to determine the commonly used animal species, parts and by products used within all regions of the country so as to determine their therapeutic efficacy.

2. Methodology

2.1 Research Design

This research was carried out as a prospective qualitative and quantitative study using a descriptive research design. A total of 20 trado-medicinal sellers and 18 traditional medical practitioners randomly selected across the 5 local government areas of Ogbomoso, Oyo State were interviewed between November 2016 and February 2017. Both traditional medical

practitioners and trado-herbal sellers that used animals (either in whole or parts) in the course of their profession were invited to participate in the research.

2.2 Study Area

Ogbomoso is located on Latitude $8^{\circ} 7' 60''$ N and Longitude $4^{\circ} 16' 0''$ E of the Equator with an elevation of 347 meters above sea level and is the second largest city in Oyo state after Ibadan, the Capital. Ogbomoso lies within the derived savannah region and serves as the gateway to Northern part of Nigeria from the West. It was founded in the mid-17th century and an approximate population of 299, 535 (NPC, 2006) with a Yoruba ethnic majority.

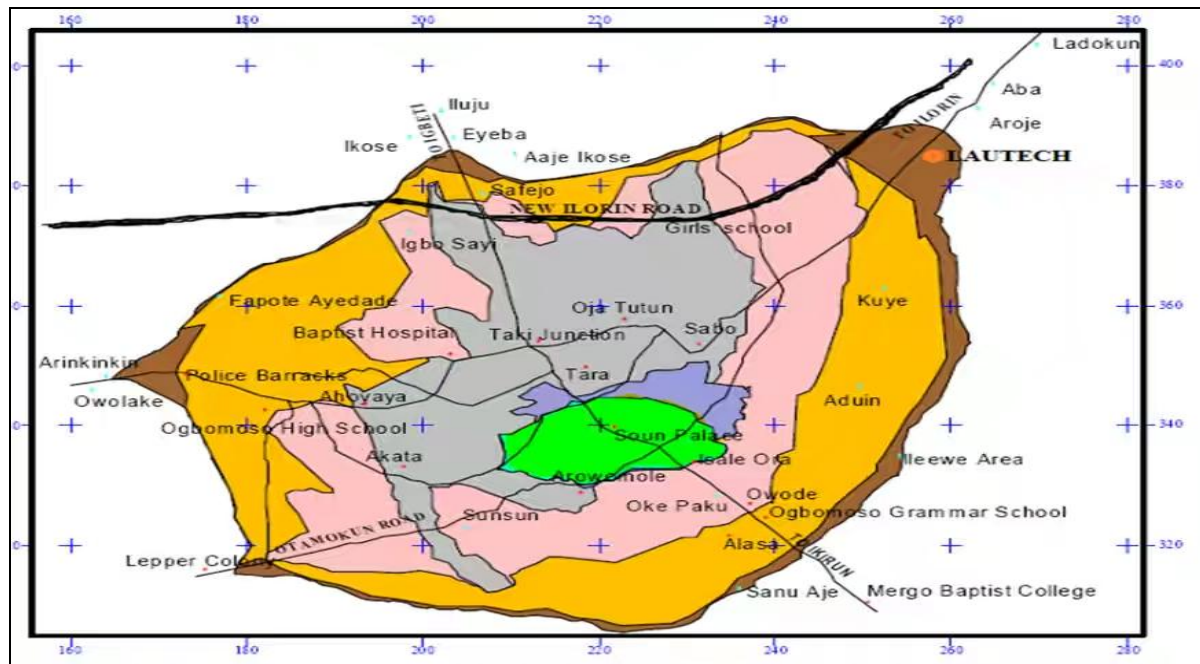


Fig 1: Showing the map of Ogbomoso area, Oyo state (Source: Britannica online, 2007).

2.3 Study Population

The study population consisted of both trado-herbal sellers and traditional medical practitioners who provided therapeutic and spiritual care using animals (life/dead or whole/parts) within Ogbomoso, Oyo state, Nigeria and agreed to participate in the study.

2.4 Research Instrument

This research was carried out as a qualitative and quantitative study where both traditional medical practitioners who provided various forms of care (whether spiritual or therapeutic) and trado-herbal sellers who sold various animals (either in parts or whole) and agreed to take part in study were administered structured questionnaires. The questionnaire contained questions pertaining to the personal data of the volunteer (such as age, gender, number of personnel trained and method of skill acquisition) and animal use (the animals used, parts used, the costs, therapeutic uses and spiritual uses). The subject of the research was introduced and the purpose of the study discussed. 38 copies of the questionnaire were distributed and the questionnaires were duly filled with the aid of a single interviewer to limit the issues of bias.

2.5 Statistical Analysis

Appropriate statistical analysis was then applied to collected data and descriptive statistics was used to analyse bio data, method of skill acquisition and uses of animal parts. Results

from the analysis were represented in tables.

3. Results and Discussion

Information on the sales/costs; traditional medical and non-medical uses of animal parts and by-products by the people of Ogbomoso, Oyo State, Nigeria was revealed by this study. A high proportion of females (constituting 100% of the respondents) in the trado-medicinal seller trade as against the traditional practitioners' trade was revealed by this study and was in line with study conducted by Soewu *et al.* ^[18]. One would believe that the selection of this profession was biased where a female child in a traditional medicine family is forced into that line of trade rather than the line of healing. However, the presence of one female within the traditional medicinal practitioner's population might just be contrary to the fact.

Table 2 shows the method of skill acquisition- either through hereditary or training. The vast majority of the respondents (94.7%) of this study obtained their skill by hereditary (family trade) and had an average of 1-5 persons under training. This shows that most learnt their trade from progenitor with a strong possibility of transferring such knowledge to their offspring. This explains the high proportion of respondents who acquired their skills as a family trade. Hence the high number of persons that have been trained and under training for the purpose of acquiring these skills as demonstrated by the result of this study.

Traditional medicine has have long been documented to serve

as a major source of income to practitioners, traders/sellers and their dependents who are said to consume a vast quantity and variety of domestic and wild animal species [15, 19]. The trade in trado-medicinal preparations commonly called ‘agbo’ has a wide acceptance amongst the Yoruba people of Ogbomoso, Oyo state in Nigeria as revealed by this study were the trado-medicinal sellers sold 43 species of animal as a basic source of income which was higher than the numbers reported in similar studies by Mahawar *et al.* [20] and Abubakar *et al.* [16] yet less than that identified for various traditional medical/non-medical practices by Soewu [15].

Traditional medicinal preparations are often made with one or more animal and/or plant species for medical and non-medical uses in man. The animal species identified by this survey comprised of 1 arthropod, 1 mollusc, 2 amphibians, 8 reptiles, 11 avian and 20 mammalian species and the highest number of animals sold belong to mammalian>avian>reptiles with the highest priced the cost of the hide and skin of the mammal *Leptailurus serval* (serval) (Table 3). 12 animal species were categorized as common; *Chamaeleo senegalensis*, *Bufo regularis*, *Felis silvestris* and *Eidolon helvum* as they were sold by approximately 50% of the respondent traders. The uses of a high number of mammals in traditional medicinal practice as demonstrated by this study were in line with similar studies conducted around the globe [10, 11, 15, 23].

Trado-medical uses of flora- and fauna-based preparations for medicinal, spiritual or recreational purposes have been reported to precede recorded human history [21, 22]. Also, Alves *et al.* [23] reported the use of animal derived remedies in the treatment of various medical conditions and for spiritual purposes to predate ancient times despite the absence of documented evidence. The medical use of animals and animal-derived products is said to date back centuries and constitutes important elements of the Materia Medica in different regions of the world [24, 25] and the traditional medicinal knowledge of indigenous people all over the world has been shown to play an important role in identifying new pharmaceutical entities worthy of exploration [26, 27, 28, 29].

Regarding the zoo-therapeutic uses of the study area, the pattern of use shows that 24 animal species were used the treatment of 20 different ailments and 22 species of animal were used for the identified 6 non-medicinal/spiritual purposes. The results shown by this study was in line with studies conducted by Alves *et al.* [23] and Djagoun *et al.* [11]; who also reported a high number of mammals being used for the preparation of indigenous medicines in Europe, Asia and Africa.

The common illnesses managed with these animals and their by products include fever, STD, and wound healing; and non-medical/spiritual uses include their use for protection and

command of authority. The result which demonstrated the traditional medicinal uses of animal parts in the management and treatment of common ailments were similar to others obtained in studies conducted by Mahawar and Jaroli [20]; Negi and Palyal [30]; Soewu [15] and Abubakar *et al.* [16].

Also the results of this study demonstrated the wide acceptance of the non-medical/spiritual uses of animal species by the people of Ogbomoso, Oyo State and in line with results of similar studies conducted by within and outside Africa [11, 15 18].

3.1 Tables

Table 1: Bio-data of Traditional Medical Practitioners and Trado-herbal Sellers

Categories		Traditional Medical Practitioners (N)	Trado-Herbal Sellers (N)
Gender	Male	17	0
	Female	1	20
Age (yrs)	≤30	0	2
	31-45	2	10
	46-60	12	8
	>60	4	0
Religion	Christian	6	6
	Moslem	9	14
	Traditional	3	0

n = frequency

Source: Field Survey Data (2017)

Table 2: Skill Acquisition Profile of Respondents

Categories		Traditional Medicine Practitioners (N)	Trado-Herbal Sellers (N)
Method of skill acquisition	Trained	1	1
	Hereditary	17	19
No. of persons currently in training	0	4	7
	1-5	10	12
	6-10	1	1
	11-15	2	0
	>15	1	0
No. of persons trained	0	1	7
	1-5	11	11
	6-10	5	2
	11-15	0	0
	>15	1	0

n = frequency

Source: Field Survey Data (2017)

Table 3: Animal Species and Cost Sold at Oja-agbo market, Ogbomoso

Scientific Name	Common Name	Yoruba Name	Parts Used	No. Respondents	Cost Range (N)
Arthropod spp					
<i>1.Malacostraca spp</i>	Crap	Alakan/ Akan	Whole	2	100-200
Amphibian spp					
<i>2.Bufo regularis</i>	African common toad	Konko	Whole	6	100-200
<i>3. Rana temporaria</i>	Frog	Opolo	Whole/ Legs	5	100-200
Molluscs spp					
<i>4.Archachatina marginata</i>	African giant snail	Igbin	Skin/ shells	7	150
Reptilian spp					
<i>5.Kinixys spp</i>	Tortoise	Ijapa/Ajapa	Head Limb Shell Whole	3 3 5 5	500-5000
<i>6.Chamaeleo senegalensis</i>	Senegal chameleon	Oga	Whole	9	100-1000

7. <i>Varanus niloticus</i>	Nile monitor	Aworiwon	Head Leg Whole	1 1 1	1000-2000
8. <i>Crocodylus niloticus</i>	Nile crocodile	Oni	Whole Head	1 1	1000-5000
9. <i>Python sebae</i>	African rock python	Ere	Head Whole Tail	4 4 4	1000-1500
10. <i>Bitis gabonica</i>	Gabon viper	Paramole	Head Whole Tail	3 1 3	500-5000
11. <i>Naja spp</i>	Cobra	Oka	Head Tail Bone Skin	4 4 2 2	50-1500
12. <i>Dendroaspis spp</i>	Mamba	Sebe	Head Whole Tail	2 2 2	500-7000
13. <i>Agama agama</i>	Red-headed rock agama Lizard	Alangba	Whole	3	100-200
Avian spp					
14. <i>Pternistis bicalcaratus</i>	Double-spurred francolin	Aparo	Whole	2	1000
15. <i>Pavo cristatus</i>	Indian peafowl	Okin	Feather Whole	1 1	100-200
16. <i>Lamprotornis chalybaeus</i>	Blue-eared glossy starling	Agbe	Feather Head Whole	1 1 2	400-7000
17. <i>Necrosyrtes monachus</i>	Hooded vulture	Igun	Feather Whole Head	1 1 1	100-30,000
18. <i>Bubo africanus</i>	Spotted eagle owl	Owiwi	Whole Head Feather	3 1 1	100-2500
19. <i>Ardeola ibis</i>	Cattle egret	Lekeleke	Head Whole Feather	3 3 3	600-800
20. <i>Streptopelia mitorquata</i>	Red eye dove	Adaba	Whole Feather Head	2 2 2	300-700
21. <i>Corvus edithae</i>	Somali crow	Kanakana	Whole	1	1200-1500
22. <i>Hirundo rustica</i>	Barn swallow	Alapandede (Lofe)	Whole Head Leg	1 1 1	1000
23. <i>Eremophila alpestris</i>	Senegal lark-heeled cuckoo	Elulu	Leg Whole Head	1 1 1	250-400
24. <i>Mimus polyglottos</i>	Mocking bird	Awoko	Whole	4	800-1000
Mammalian spp					
25. <i>Hystrix cristata</i>	Crested porcupine	Lili	Whole Hide/skin	2 2	400-1000
26. <i>Thryonomys swinderianus</i>	Greater cane rat	Oya	Head/Fur Whole	3 2	50-700
27. <i>Cephalophus maxwelli</i>	Maxwell's duiker	Etu	Head Skin Leg	1 1 1	500-1500
28. <i>Cricetomys gambianus</i>	Giant rat	Okete	Whole Tail	5 5	100-700
29. <i>Felis silvestris</i>	Wild cat	Olongbo oko	Head Whole	2 2	2000-3000
30. <i>Felis silvestris catus</i>	Domestic cat	Olongbo ile	Head Fur	6 6	300-1500
31. <i>Syncerus caffer</i>	African buffalo	Efon	Whole Horn Bone Skin	2 2 1 1	500-20,000
32. <i>Crocidiora nigeriae</i>	Shrew	Asin	Whole	5	200-700
33. <i>Leptailurus serval</i>	Serval cat	Ekun	Whole Skin/hide	4 2	12,000-100,000
34. <i>Tragelaphus scriptus</i>	Bushbuck	Igala	Horn	3	1500-2000

			Skin Whole	3 2	
35. <i>Gorilla gorilla</i>	Gorilla	Inaki	Head Whole Legs	1 1 1	10,000
36. <i>Mus minutoides</i>	Pigmy mouse	Eliri	Whole	1	100
37. <i>Civettictis civetta</i>	African civet cat	Eta	Skin Whole Tail	2 1 2	50-3000
38. <i>Erythrocebus patas</i>	Patas monkey	Ijimere	Paw Head Whole Skin	4 4 2 4	500-5000
39. <i>Colobus guereza</i>	Colobus monkey	Alakadun	Whole	1	100-300
40. <i>Funisciurus anerythrus</i>	Tree squirrel	Okere	Head Whole Tail	1 1 1	50-700
41. <i>Eidolon helvum</i>	Straw-coloured fruit bat	Adan	Whole	6	300-500
42. <i>Panthera leo</i>	Lion	Kiniun	Skin Bone	1 1	2000-10,000
43. <i>Pan troglodytes</i>	Chimpanzee	Obo	Head Whole Skin	1 1 1	500-3500

Source: Field Survey Data (2017)

Table 4: Animal Species and Parts Used for Therapeutic Purposes

Uses	Yoruba Name	Scientific Names	Common Names	Parts Used	No. of Respondents
1. Epilepsy	Alanagba	<i>Lacertilian spp</i>	Lizard	Whole	2
2. Inflammation	Sebe	<i>Dendroaspis spp</i>	Mamba	Head	1
	Eye aiyekoto	<i>Psittacus erithacus</i>	African grey parrot	Head/ Feathers	1
3. Fever	Oyin	<i>Anthophila</i>	Bee	Honey/ Whole	1
	Oga	<i>Chamaeleo senegalensis</i>	Senegal chameleon	Head/whole	4
	Asin	<i>Crocidiora nigeriae</i>	Shrew	Whole	2
4. All illnesses	Okete	<i>Cricetomys gambianus</i>	Giant rat	Whole/ tongue/ tail	4
	Igimire	<i>Erythrocebus patas</i>	Patas monkey	Skin/head/ Flesh	2
	Oka	<i>Naja spp</i>	Cobra	Teeth	4
5. Safe delivery	Paramole Ilaa/Ejo	<i>Bitis gabonica</i>	Gabon viper	Flesh	1
	Igbin	<i>Archachatina marginata</i>	African Giant snail	Flesh	1
6. Treatment of STIs	Okete	<i>Cricetomys gambianus</i>	Giant rat	Whole/ tongue/ tail	4
7. Stomach ulcers	Etu	<i>Cephalophus maxwelli</i>	Maxwell's duiker	Horn/ intestine/ skin	2
	Agilinti	<i>Varanus varius</i>	Monitor Lizard	Whole	2
	Ekun	<i>Leptailurus serval</i>	Serval	Legs/fingers/skin	8
8. Convulsion	Igimire	<i>Erythrocebus patas</i>	Patas monkey	Skin/head	1
	Ijapa	<i>Kinixys spp</i>	Tortoise	Whole	5
	Igbin	<i>Archachatina marginata</i>	African Giant snail	Whole/back	5
	Ekun	<i>Leptailurus serval</i>	Serval	Bones/skin/ legs	8
9. Stroke	Efon	<i>Syncerus caffer</i>	African buffalo	Head	1
10. Pile / haemorrhoids	Sebe	<i>Dendroaspis spp</i>	Mamba	Intestine	3
11. Bedwetting	Opolo	<i>Bufo gularis</i>	Toad	Whole	1
12. When a child cannot work	Aparo	<i>Pteraisitis bicalcaratus</i>	Double-spurred francolin	Whole	1
	Ehoro	<i>Oryctolagus cuniculus</i>	Rabbit	Legs/hair/ Bones	2
13. Appetite stimulant	Malu	<i>Bos Taurus</i>	Cow	Brain/horn/urine	2
14. Kidney failure	Oga	<i>Chamaeleo senegalensis</i>	Chamelon	Head/whole	4
15. Healing of old wounds	Igbin	<i>Archachatina marginata</i>	African Giant snail	Whole/back	5
	Akika	<i>Manis tricuspis</i>	Whit-bellied Pangolin	Tail/head/ skin	2
	Ehoro	<i>Oryctolagus cuniculus</i>	Rabbit	Hair/leg/ bones	2
16. Madness	Eta	<i>Civettictis civetta</i>	African civet	Whole	3
	Opolo	<i>Bufo gularis</i>	African common toad	Legs/whole	2
17. Restore memory loss	Awoko	<i>Mimus triurus</i>	White-banded mocking bird	Whole	1
18. Anaemia	Akika	<i>Manis tricuspis</i>	Whit-bellied Pangolin	Head/tail/ skin	3
19. Rheumatism	Ekun	<i>Leptailurus serval</i>	Serval cat	Bones/skin	8
20. Strengthen young babies	Egbera/eku	Egbera/eku	Rattus	Whole	1

Source: Field Survey Data (2017)

Table 5: Animal Species and Parts Used for Non-medical Purposes

Uses	Yoruba Name	Scientific Names	Common Names	Parts Used	No of Respondents
1. For protection	Esin	<i>Equus caballus</i>	Horse	Tail	1
	Ikooko	<i>Crocuta crocuta</i>	Spotted hyena	Skin	1
	Lili	<i>Hystrix pumila</i>	Crested porcupine	Skin	1
	Aguntan	<i>Ovis aries</i>	Sheep	Head/leg	1
	Etu	<i>Cephalophus maxwelli</i>	Maxwell's duiker	Intestine/ horn/Skin	2
	Igimire	<i>Erythrocebus patas</i>	Patas monkey	Skin/head/ body	1
	Igun	<i>Necrosyrtes monachus</i>	Hooded vulture	Whole	1
	Ijapa	<i>Kinixys spp</i>	Tortoise	Whole	5
	Agilinti	<i>Varanus varius</i>	Monitor Lizard	Whole	2
	Oya	<i>Thryonomys swinderianus</i>	Greater cane rat	Whole/hair	5
2.Command authority	Inaki	<i>Gorilla gorilla</i>	Gorilla	Skin/head/ claw	1
	Aja	<i>Canis lupus familiaris</i>	Local Dog	Skin	1
3.Favour	Eta	<i>Civettictis civetta</i>	African civet	Intestine/ horn/skin	2
	Ijapa	<i>Kinixys spp</i>	Tortoise	Whole	5
	Igbin	<i>Archachatina marginata</i>	African giant snail	Whole/back	5
	Asin	<i>Crocidiora nigeriae</i>	Shrew	Whole	2
	Ekun	<i>Leptailurus serval</i>	Serval	Bones/skin/ legs/fingers	8
	Eye-ikoode	<i>Psttacus erithacus</i>	Grey Parrot	Feather	1
4.Sacrifice for old	Ewure	<i>Capra aegagrus hircus</i>	Goat	Intestine	1
	Alangba	<i>Lacertilian spp</i>	Lizard	Whole	2
5.Boost business	Eta	<i>Civettictis civetta</i>	African civet	Whole	3
	Agilinti	<i>Varanus varius</i>	Monitor Lizard	Whole	2
	Eku onilakan	<i>Hybomys trivirgatus</i>	Stripped mouse	Whole	1
	Igala	<i>Tragelaphus scriptus</i>	Bushbuck	Whole/foot	6
6.Respect/good behaviour	Akika	<i>Manis tricuspis</i>	Whit-bellied pangolin	Skin	3

Source: Field Survey Data (2017)

4. Conclusion

The acceptance of both medical and non-medical uses of animal species demonstrated by the results of this study and similar studies has shown that traditional medicinal practice just might have a place in our primary health care system. There is however the need to conduct extensive ethno-pharmacological surveys of all the regions of the country, to validate the therapeutic efficacy of these fauna-based preparations and also the standardization of therapeutic doses. Hence the need for the rapid development of policies and strategies that would in the end result in the overall integration of our traditional medicine practices into our existing health care systems.

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