



Ethno-Medicinal Uses of Wild Animal Products in Mokwa Local Government Area, Niger State, Nigeria

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ABSTRACT

Since the beginning of time, traditional medicines, including both plant and animal products, have been utilized to treat a variety of illnesses, especially in rural areas around the world. The purpose of this study, which was carried out in the Mokwa Local Government Area, was to acquire information on the types of wild animals hunted and used in traditional medicine, determine the types of illnesses cured and the perception of the people towards traditional medicine in the area. Structured questionnaires and oral interviews were used to gather data on the local use of traditional medicine from a representative sample of the communities. The data collected were analyzed using descriptive statistics and presented in tables, charts and percentages. The results obtained revealed that the majority of respondents in the research area used animal products as medicine. Among the communities studied, Bokani was observed to record the least usage (6.67 %), while Kudu and Kpaki both had higher (10.67 %) usage respectively. The most frequently used wild animals include Duiker, Bush buck and Monitor Lizard. In Kpaki community, 11 animals were identified, while in Bokani community, only 4 animals were identified. The ways through which wild animals are acquired for the medicinal purpose include farmland, market and the state forest reserves around. A total of 20 animal products were identified to be effective in treating diseases and ailment. Therefore, sustainable use of wild animal species needs to be enhanced for improved conservation of threatened species and prevent their extinction in the near future.

Keywords: Traditional medicine; Wild animals; Mokwa

INTRODUCTION

The links between animals and human health have been substantiated throughout the history of mankind, from causes to cure of human diseases. As in the past, humans have long exploited animal products (example; fur, skin, horns) to provide food and materials for making tools, feed, ornaments, medicines, fertilizer, and income, as well as providing agricultural, transport, entertainment, companionship, and religious services (Alves *et al.*, 2016). Humans are biologically animals that live in association with thousands of other animal species and share the same environment and a wide diversity of diseases that can be mutually transmitted. If, on one hand, animals are

vectors of human diseases, they are also indispensable for their treatments and cures (Rômulo and Ulysses, 2018).

Products derived from animals are fundamental ingredients of both traditional remedies and modern drugs. Wild and domestic animals and their byproducts (e.g., hooves, skins, bones, feathers, and tusks) form important ingredients in the preparation of curative, protective, and preventive medicine (Whiting *et al.*, 2011; Martinez, 2013; Williams *et al.*, 2013). Small mammals like hares, porcupines, rats, mice and hyraxes are commonly found in human settlements and hence are easily caught or trapped, and used for food and other purposes (Magie, 2012).



Traditional medicine is described by the World Health Organization (WHO) as "health practices, approaches, knowledge and beliefs incorporating plant, animal and/or mineral-based medicines, spiritual therapies, manual techniques, and exercises applied singularly or in combination to maintain well-being, and also to treat, diagnose or prevent illness" (Gray, 1997). Magige (2012) reported that, the majority of the world's population relies mostly on animal- and plant-based medicines. The greater usage of wild meat for medical purposes distinguishes it from the use of domestic meat by indigenous populations (as further validated by Vijayakumar *et al.* (2015). For instance, the demand for wild meat (13 %) was associated with medicinal properties to a greater extent than domestic meat (1 %), and it was used to treat a wide range of diseases and ailments (Kanagavel *et al.* 2016). Although the sale of wild meat helps to promote local economies and livelihoods (Kumara and Singh 2004), studies in 25 African countries have shown that at least 354 bird species are used in traditional curing practices (Williams *et al.*, 2013). The exports of Saiga (*Saiga tatarica*) horn to the Chinese traditional medicine market as a substitute for the horn of endangered Rhinos resulted in Saiga antelopes, being placed on the red list of critically endangered species (Milner-Gulland *et al.*, 2001). Products derived from medicinal animals are directly used in the confection of popular remedies and magical items such as charms, amulets, and talismans that are widely sought after in traditional medicinal practices (Anyinam, 1995). The study identifies the types of wild animals used in traditional medicine and evaluates perception of the people to traditional medicine.

MATERIALS AND METHODS

Study Site

Mokwa Local Government Area lies within Latitude 9° 17' 41.35" " N and Longitude 5° 03' 14.83" E. with a land area (Sq km) of 4,478.4. It shares borders with Moro Local Government Area in Kwara state, Borgu, Lavun, Agale, Kacha and Mashegu Local Government Area of Niger State. Mokwa is consisting of sub-districts such as Muwo, Bokani, Kudu, Kpaki, Jebba, Rabba, Ja'agi and others. The people are predominantly Nupe who are mainly peasant farmers, fishermen and cattle rearers. The population of Mokwa Local Government Area is approximately 244,937. In terms of climatic condition, Mokwa has average temperature of 42 °C with mean annual rainfall of about 1000 mm – 1600 mm. The rainy season is characterized by strong wind and torrential lawn pours. The hammattan period starts in November and stop abruptly in February after which intense heat begins. Plantation of Mokwa Local Government area is a mixture of Northern and Southern guinea savannah (Iga, 2011).

Study Design

Structured questionnaire, personal interview and direct observations were carried out. A total of 75 structured questionnaires were administered randomly to respondents (sampled members of the communities) in 5 selected communities (Mokwa central, Kpaki, Kudu, Ja'agi and Bokani) in Mokwa and 15 questionnaires were administered in each community.

Data Collection Techniques

Data were collected using structured questionnaire and oral interviews from sampled members of the communities. Interview was conducted on each respondent (adult man and women) having knowledge on the use of traditional medicines; comprising of traditional medical practitioners, herb sellers and traditional birth attendants, patients, others.



The questionnaires focused on level of education, occupation, types of small mammals hunted, methods of hunting, types of mammals used for medicinal purposes, animal product or part used for treatment, ailment treated, methods of preparation, route of administration and application were recorded.

Duration of study

A period of four months (July to October, 2022) was used to conduct the survey of the study.

Data Analysis

Data generated from the field were coded, entered and saved using Microsoft excel spread sheet, then Microsoft Office Excel®

2013 was used to analyze the data obtained using descriptive statistics and results are presented in tables, charts and percentages.

RESULTS

The results in Table 1 showed the socio-demographic characteristics of the respondents where males recorded 86.67 % while 13.33 % were females. The age range of 40–50 years recorded the highest (34.67 %). Majority (66.67 %) of the respondents were Muslims, and only 33.33 % are Christians. The major occupations of the respondents were farming (33.33 %), herbalists (21.33 %), herbal vendors (20 %), and civil servants (9.33 %).

Table 1 Socio-Demography of the Respondents

Variables	Frequency (n=75)	Percentage (%)
Gender		
Male	65	86.67
Female	10	13.33
Marital Status		
Single	58	77.33
Married	17	22.67
Age		
20-30	19	25.33
31- 40	16	21.33
41-50	26	34.67
50 & Above	14	18.67
Religion		
Islam	50	66.67
Christianity	25	33.33
Occupation of the Respondents		
Farmer	25	33.33
Civil servants	7	9.33
Herbalist	16	21.33
Herb seller	15	20
Trader	12	16

Table 2 shows the educational level of the respondents. Ja’agi had the highest percentage of educated respondents (14.67 %), while Kpaki, with 12 %, had the least.

Kpaki had the highest percentage of non-educated respondents (8 %), while Ja'agi, with 5.33 %, had the least.



Table 2. Education of Respondents

Communities	Not Educated	Educated
Mokwa	8 (10.67%)	7 (9.33%)
Kudu	10(13.33%)	5(6.67%)
Kpaki	9(12.00%)	6(8.00%)
Ja'agi	11(14.67%)	4(5.33%)
Bokani	10(13.33%)	5(6.67%)
Total	48(64.00%)	27(36.00%)

Table 3 shows the use of animal products used as medicine in the study area. The result indicates that the majority of the respondents made use of animal products as medicine in the study area.. Both Kudu and

Kpaki communities had the highest positive response (10.67 %), respectively, on the use of animal products as medicine, while Bokani (6.67 %) had the least.

Table 3. Communal use of animal products for ethno-medicine

Communities	Yes	No
Mokwa	7(9.33%)	8 (10.67%)
Kudu	8(10.67%)	7(9.33%)
Kpaki	8(10.67%)	7(9.33%)
Ja'agi	6(8%)	9(12%)
Bokani	5(6.67%)	10(13.33%)
Total	34(45.34%)	41(54.66%)

Result in Table 4 showed the kinds of wild animals used for traditional medicine which includes Duiker, Bush buck, Monitor Lizard

and others. Kpaki community recorded the highest, having 11 animals, while the Bokani community has the least (4) animals.

Table 4: Wild Animals hunted in the Study Area

S/no	Name	Communities				
		Mokwa	Kudu	Kpaki	Ja'agi	Bokani
1	Duiker	+	+	-	-	-
2	Bush buck	+	+	+	-	-
3	Patas Monkey	+	+	+	-	-
4	Giant Rat	+	+	-	+	+
5	Civet Cat	+	-	+	+	-
6	Crocodile	+	-	+	-	-
7	Python	+	+	+	+	+
8	Warthog	-	+	-	-	+
9	Chameleon	-	+	-	-	-
10	Hyena	-	+	-	-	-
11	Monitor Lizard	-	-	+	+	+
12	Squirrel	-	-	+	-	-
13	Grass cutter	-	-	+	-	-
14	Canary bird	-	-	+	-	-
15	Kob	-	-	+	-	-
16	Tortoise	-	-	-	+	-
17	Cobra Snake	-	-	-	+	-
18	Porcupine	-	-	+	+	-

+ = Present; - = Absent



Data on Figure 1 revealed the number of wild animals hunted from different locations. The result shows that higher

number of animals 30.67% hunted come from the farmland while market 18.67% is the least.

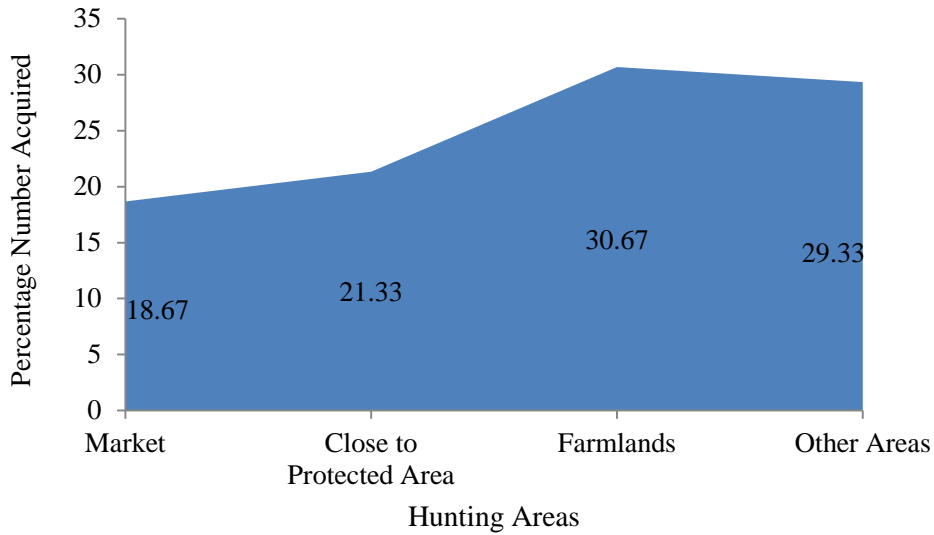


Figure 1. Location where wild animals were hunted in the study area

The result in figure 2 shows that shooting with a local gun recorded highest 24 %

response while bush burning is the least with 5.33 % response.

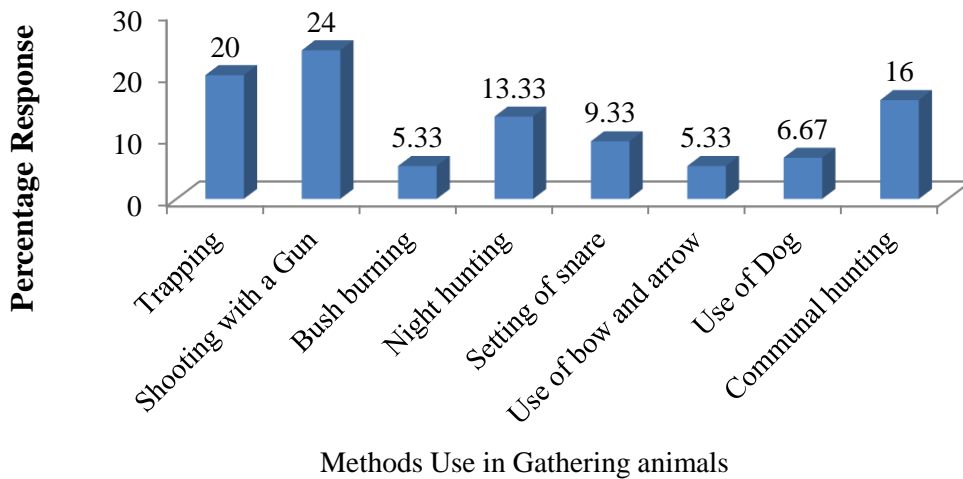


Figure 2. Method use in gathering wild animals in Study Area

Result in Table 5 shows the wild animals and parts utilized as medicine in the study area. A total of 20 animal products were used to cure various ailments.



Table 5. Wild animals' parts used in the treatment of ailments in the area

S/NO	Wild Animals	Part used	Mode of preparation	Sickness Cured	Routh of Admin
<u>1</u>	Pangolin	Bone	Burn	Stroke	Rub
		Skin	Grind, mix with Shea butter	Mental muteness	Rub
		Skin	Grind to powder	Cancer	Rub
<u>2</u>	Chameleon	whole	Smoking	Traditional purpose/ incantation	Rub
<u>3</u>	Hyena	Skin	Sun dry	Spiritual protection	Wear
<u>4</u>	Crocodile	Whole/ Stone	Sun dry	Spiritual protection	Wear
<u>5</u>	Python	Oil	Extract	Bone fracture treatment	Rub
		Snake skin	Dry, roast	Snake bite	Rub
		Head of snake	Roast	Snake bite	Rub
<u>7</u>	Cobra	Fat	Extract	wound	Rub
<u>8</u>	Bush buck	Skin	Burn to ashes mix with pomade	Skin disease	Rub
<u>9</u>	Civet Cat	Skin	Remove the skin cook	Asthma	Drink
<u>10</u>	Monitor Lizard	Whole	Sundry/ Cook	Cough	Drink
<u>11</u>	Snail	Intestine	Grind to powder	Ulcer	Drink
		Whole	mix with Shea butter oil	Stroke, pain	Rub
		Slime	Boil	Hepatitis	Drink
<u>12</u>	Lion	Lion skin	Roast	Wound	Rub

Result in figure 3 shows the perception of the respondents on the use and effectiveness of traditional medicines in the study area. The figure shows that (36 %) respondents

stated that traditional medicine is effective being the highest, while 6.67 % were undecided being the lowest.

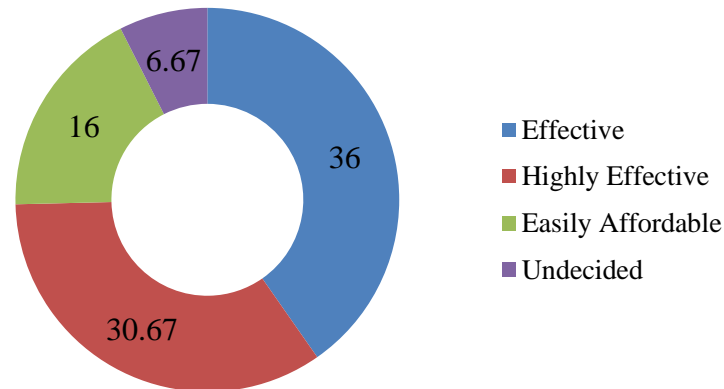


Figure 3. Perception of the respondents on the use and effectiveness of traditional medicines

DISCUSSION

From this study, a total of 18 mammal species are identified as being hunted, 12 of which are used in local medicine and others are eaten as sources of animal protein. This is consistent with Soewu (2013) report that 137 different wild animal species in Nigeria have parts that are used in traditional folk medicine, and Mfunda and Rskaft's (2010) claim that forest-dwelling communities have depended on wildlife for medicine, protein, and income, and that wild meat still provides for the subsistence of many indigenous communities around the world.

As shown in Table 3's findings on the communal use of animal products, 45.34% of respondents in the community utilize wild animal products for ethno-medicine, demonstrating the reliance of indigenous groups on wild animals for cultural and medical purposes.

Farmland accounts for 30.67% of all wild animal collections, which supports the claim made by Frackowiak *et al.* (2013), who report that populations of small mammals, in particular, are increasing and dispersing into agrarian landscapes as a result of the extremely high levels of hunting for wild animals in their natural habitats, causing significant economic costs for farmers. Their appearance in farmlands therefor makes it

easy for the hunters and farmers to kill them for food and medicines. This agrees with Kanagavel and Raghavan (2013) claim that hunting small-sized animals could also be a strategy used by the local communities to satisfy their inclination toward wild meat. Hunted species include the duiker, bush deer, and monitor lizard, but excessive hunting without a conservation strategy could cause an animal to become extinct. The method use gathering wild animals in the study area indicates that shooting with a gun, use of snare, bush burning are the most popular methods use.

Wild animal bone, skin, oil, and other parts are among those utilized to treat ailments in the area, as stated in Table 5. A total of 16 different animal products were used to treat a variety of ailments. According to Martinez, (2013; Whiting *et al.*, (2011), and Williams *et al.*, (2013), wild and domestic animals, as well as their byproducts (such as hooves, skins, bones, feathers, and tusks), form important ingredients in the preparation of curative, protective, and preventive medicine. For instance, pangolin bone is burned and used in the Mokwa culture to treat strokes, while python oil is used to wounds or bone fractures to speed up healing.



Bone marrow and fat from vertebrates were shown to have the oldest known therapeutic chemicals (Alves and Rosa, 2013). Additionally, as energetic nutrients, fat and bone marrow were favoured by hunters and scavengers (Russell, 2012).

The research also shows that Hyena skin and Crocodile Stone are given to patients to wear as spiritual protection after being sun-dried; this supports Rômulo and Ulysses' (2018) claim that early humans were known to frequently consume or wear animal parts that were believed to have healing or protective properties.

Additionally, the research shows that, Monitor Lizards are killed and cooked, - consumed to treat coughs, while Civet Cats' skin is cooked while being consumed to treat asthma.

This is also consistent with Glover and Glover's (2014) claim that traditional remedies were reportedly utilized in the Serengeti District villages they visited, including African savannah hare, crested porcupine, and rock hyrax. This corroborates the claim made by Rômulo and Ulysses (2018) that beliefs about wildlife also include a number of medicinal uses of animals, mostly to build stronger bones and muscles, cure or prevent respiratory problems, improve growth and general strength, or cure and prevent dysfunctions in the stomach and digestive system. The parts most used are the grease, bones, hooves, and gall.

The knowledge and treatment of human (and animal) diseases have advanced significantly as a result of studies on wild animals (Schacter, 2006). The findings on respondents' perceptions of the use and efficacy of traditional medicines in the research region show that many respondents believed that traditional medicine was successful in treating illnesses and diseases. According to Elujoba *et al.* (2005), traditional medicine has a number of benefits, such as cheap cost, accessibility, affordability, quick availability, and maybe minimal toxicity.

Although opinions on the current state of wild animals in the study area suggest otherwise, small and medium-sized animals are still widespread and easily accessible throughout the communities, particularly in the protected forest areas. Before making a catch, the villages and hunters must go a great distance. This indicates that continued cropping and human use of animal products for medicine may cause some local species to become extinct or almost extinct in the near future. For instance, Milner-Gulland *et al.* (2001) claimed that Saiga (*Saiga tatarica*) horn exports to the Chinese traditional medicine market as a replacement for the horn of endangered Rhinos led to Saiga antelopes being listed as a critically endangered species in October, 2002 after their population crashed.

The results of the investigation into the impact of traditional medicine on wildlife conservation in the study area show that the main threats to wildlife protection in the region are poaching by locals and poachers from neighboring states, trade in wildlife products between states, and indiscriminate bush burning. Threats to the world's wildlife include habitat destruction and the international wildlife trade, which affect a number of species that are utilized in traditional medicine (Alves and Rosa, 2006). An example of a direct impact from human exploitation of animal biodiversity is defaunation. That is the reduction in abundance of individuals of animal populations on a local or regional scale, or even their complete extinction (Van Vliet *et al.*, 2016). While the use of wildlife in traditional medicine has been seen as a good way to help the community in sourcing for early treatment before going to a hospital that may be located far from the community, in that case it will be a good idea if government could help to promote the use of these animal in a sustainable way as recommended by CITES (McNeill and Lichtenstein, 2003).



CONCLUSION

The finding of this study shows that Mokwa communities' uses wild animals in their age long traditional folk medicine and this use of wildlife in traditional medicine has been seen as a good way to help the community in sourcing for early treatment before going to a hospital that may be located far from the community. The continued and unsustainable use of medicinal animals poses a threat to many species populations

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