

Assessment of Indigenous Plants Used for Health Care Management in Ukum, Benue State, Nigeria

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Indigenous plants for health care management are plants that are not exotic or introduced from another country but are native of the studied region and which are seen growing in an area and which are used for health care management from time immemorial for both treatment and prevention of diseases. However, the species, type, part of plant and diseases cured, its harvesting methods as well as the factors that influence the choice and use of indigenous plants for health care management are not documented in the study area, hence the present study is an attempt to fill the lacuna. A multi-stage sampling procedure with three stages was adopted for this study. First, a base line survey was conducted in February, 2018 in nine (9) districts of Ukum Local Government Area of Benue State and 335 medicinal herbs collectors were identified as follows; Tsaav 33; Lumbuv 44; Uyam 34; Borikyo 40; Mbatian 43; Aterayange 33; Ityuluv 25; Mbayenge 38 and Mbazun 45 respectively. At 30% sampling intensity, a total of 101 semi-structured questionnaires were administered to generate data for this study using the method of Diaw et al. (2002). Data collected was analyzed using descriptive statistical tools and logistic regression at $\alpha_{0.05}$. The result of the study showed that, a total of eighty-eight (88) indigenous plants used for the treatment of thirty eight (38) ailments were recorded. Also, eight (8) methods of harvesting indigenous plants for healthcare management were identified. Similarly, three factors that influenced the choice and use of indigenous plants for healthcare management in Ukum were determined. Based on the above findings, the followings are recommended; Herbal practitioners and hunters that are familiar with the names of indigenous plants used for healthcare management should disseminate such knowledge to their children, servants and other community members to prevent the loss of the knowledge. All the districts and wards in Ukum Local Government Area should be encouraged to grow indigenous plants that are used for healthcare management on their farms around their houses and as plantations to prevent them from extinction. Seedlings of indigenous plants can be raised in nurseries by Benue State Government and given free to Ukum Local Government Area communities for onward plantation on their farms and around their houses. If people of Ukum plant these seedlings on their farms and around their houses, the pressure on wild indigenous plants used for health care management will be reduced. Harvesting methods that uproot an entire plant or that takes more roots than necessary or cutting of tree tops or palmtops should be avoided as this is capable of killing the entire plants. De-barking round a tree by herbal practitioners is an attempt to kill the plant and should be avoided. However, where de-barking is to be done, debark only one portion and allow the other portion which should be de-barked when the already debarked portion has regained its part. There should be a standardized dosage in traditional medicine. This should be followed by an improved extraction method that should not be mystified.

KEYWORDS: Diseases, Health care management, Harvesting methods and Indigenous plants.

INTRODUCTION

Indigenous plants have been used in healthcare management from time immemorial for both treatment and prevention of diseases. Most indigenous plants contain inherent active ingredients that cures disease or relieve pain (Oladunmoye et al., 2011). The World Health Organization (2000) has estimated that 80 % of the inhabitants of the world rely mainly on traditional medicines for their primary health care needs Igoli et al. (2005) carried out an ethno botanical survey and documented one hundred and seven (107) medicinal plant species used among Tiv in Benue State. According to Gbile et al., (1999; 2010), most of the indigenous medicinal plants are going into extinction and in response to that, Monier, (2016) suggested that a sustainable conservation effort should be put in place by communities and government to safeguard these important medicinal plants. Shomkegh et al. (2016), identified a total of ninety-four (94) plant species that are utilized for medicinal purposes in selected Tiv communities (Gboko 26, Kwande 40 and Guma 28) of Benue State. Similarly, Ikyaagba, (2009) in his survey on ethno botanical potentials of plant species of University of Agriculture Makurdi wildlife park and Ikwe Games Reserve, Benue State, identified seventy-one (71) plant species belonging to thirty nine families out of which 48% were used for health care management. According to Shomkegh et al. (2016), who observed in a research carried out on medicinal plants in three communities in Tiv land (Gboko, Kwande and Guma) that indigenous plant harvesting methods were mostly destructive and this has negative implication on the species abundance. He observed that most of the harvestings or collections were from the wild with no conservation effort in place. This poses a serious threat to the practice in the study area as no plantation of medicinal plants are sighted anywhere in the study area.

METHODOLOGY

Description and location of the study area.

Ukum is located between latitude 7° 31' 0" North, 9° 37' 0" East and Longitude 7° 25' 0" North, 9° 43' 0" East and shares boundaries with Wukari to the North and East, to the South by Katsina/Ala Local government area and to the West by Logo Local government area (**Figures 1, 2 and 3**).

Sampling procedure and sample size

A multi-stage sampling procedure with three stages was adopted for this study. First, a base line survey was conducted in February, 2018 in nine (9) districts of Ukum Local Government Area of Benue State and 335 medicinal herbs collectors were identified as follows; Tsaav 33; Lumbuv 44; Uyam 34; Borikyo 40; Mbatian 43; Aterayange 33; Ityuluv 25; Mbayenge 38 and Mbazun 45 respectively. At 30% sampling intensity, a total of 101 semi-structured questionnaires were administered to generate data for this study using the method of Diaw et al. (2002). Data collected was analyzed using descriptive statistical tools and logistic regression at $\alpha_{0.05}$.

RESULT AND DISCUSION

Demographic characteristics of Herbal Practitioners in the study area.

The result on sex of the respondents indicated that, 73 (75.3%) of the respondents are males while 24 (24.7%) are females. The result on age shows that 15 (15.5%) of the respondents falls between 1-15 years, 17 (17.5%) 16-30 years; 30 (30.9%) 31-45 years and 35 (36.1%) 45 years above respectively. The result on educational status of the respondents showed that 17(17.5%) had formal education while 80(82.5%) had informal education.

The result on state and local government of origin shows that all respondents are indigenes of Benue state (i.e. 97 respondents representing 100%). The result on duration of stay of the respondents in the study area showed that; 17(17.5%) of the respondents stayed for about 1-5 years, 20(20.6%) 6-10 years and 60(61.9%) stayed above 11 years respectively.

The result on household size of the respondents shows that, 27(27.8%) has a house hold size of 1-3; 40(41.3%) 4-8 and 30(30.9%) had a household size of 9 and above. The result on marital status of the respondent shows that, 7(7.2%) of the respondents were single; 79(81.2%) are married; 6(6.2%) were divorced and 5(5.2%) of the respondents are widows. The high number of males recorded on sex means that majority of the herbal practitioners in the study area are males this is in sharp contrast with the results of Fakeye, et al. (2009), who conducted a research on the attitude and use of herbal medicine among pregnant women in Nigeria and revealed from

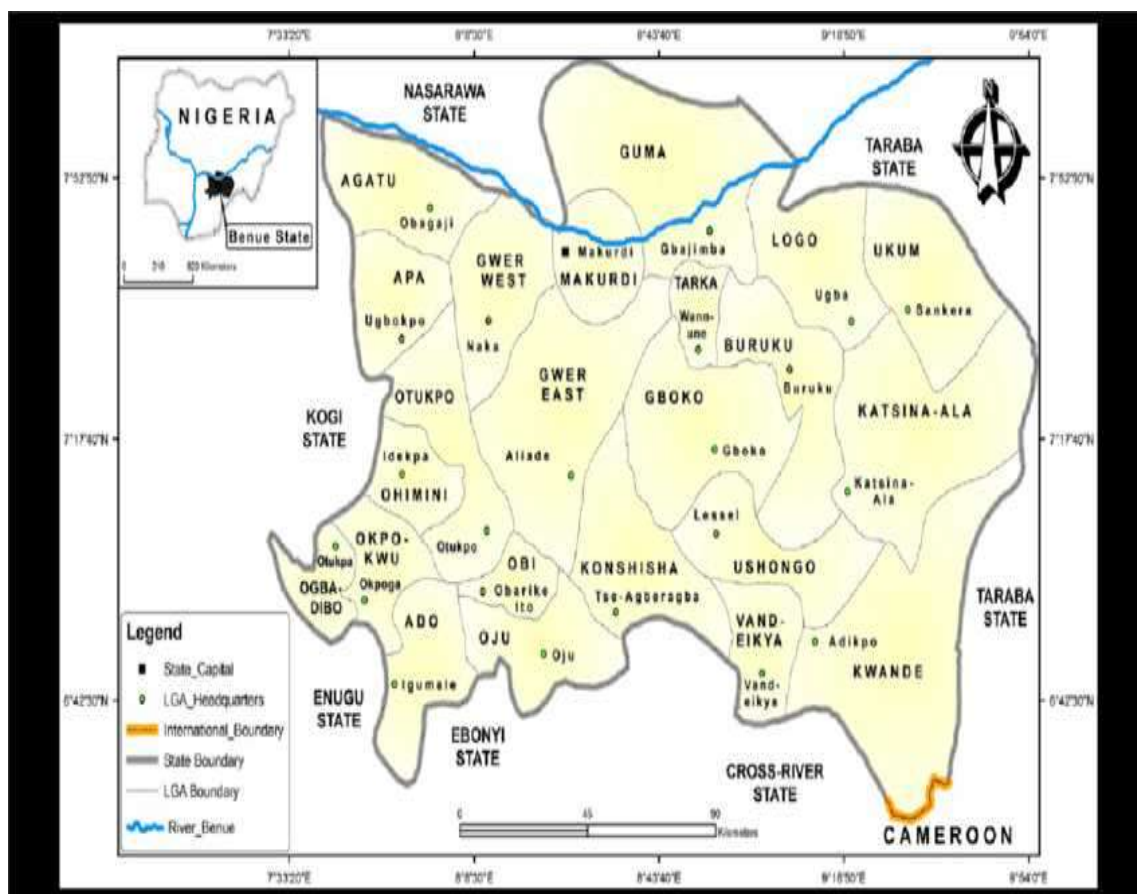


Figure 1. Map of Benue state showing Ukum (study area).

the demographic data that most of the herbal practitioners in the study area were women, this contrast may be due to geographic locations in which these two researches were conducted.

On age, the highest number of forty five (45) years recorded of the respondents implies the active and productive age of the respondents. This means that, majority of the herbal practitioners are still active and productive. This also agrees with Shomkegh et al. (2016) who said that most herbal practitioners feel reluctant to teach their children this practice because they are in their late 40's thinking they will pass the knowledge to them in their old age. The higher number of the respondents with informal education implied that only few educated people are involved in herbal practices. The finding corroborates Ancha et al. (2015) who observed, that most herbal practitioner fails to document the indigenous medicinal plants they use due to their low level of education. The result on Local government, state and duration of stay in the study area shows that all the respondents are

indigenes of both the local government and state and both of them have stayed for more than eleven years in the study area while majority are married with many of them having household size of four to eight children. This may be due to the fact that most of them are polygamous.

Indigenous plants used for healthcare management in Ukum

The result on indigenous plants used for healthcare management in Ukum shows that a total of 54 indigenous medicinal plants with life forms of 13 herbs, 21 shrubs and 56 trees belonging to 27 families were recorded. The parts of the plants mostly used includes stems, roots, leaves and barks. Similarly, thirty eight (38) different ailments were found to be cured by these indigenous plants in Ukum local government area of Benue State (Tables 1 - 3). The result of the study indicated that, Annonaceae and Moraceae families provided the highest

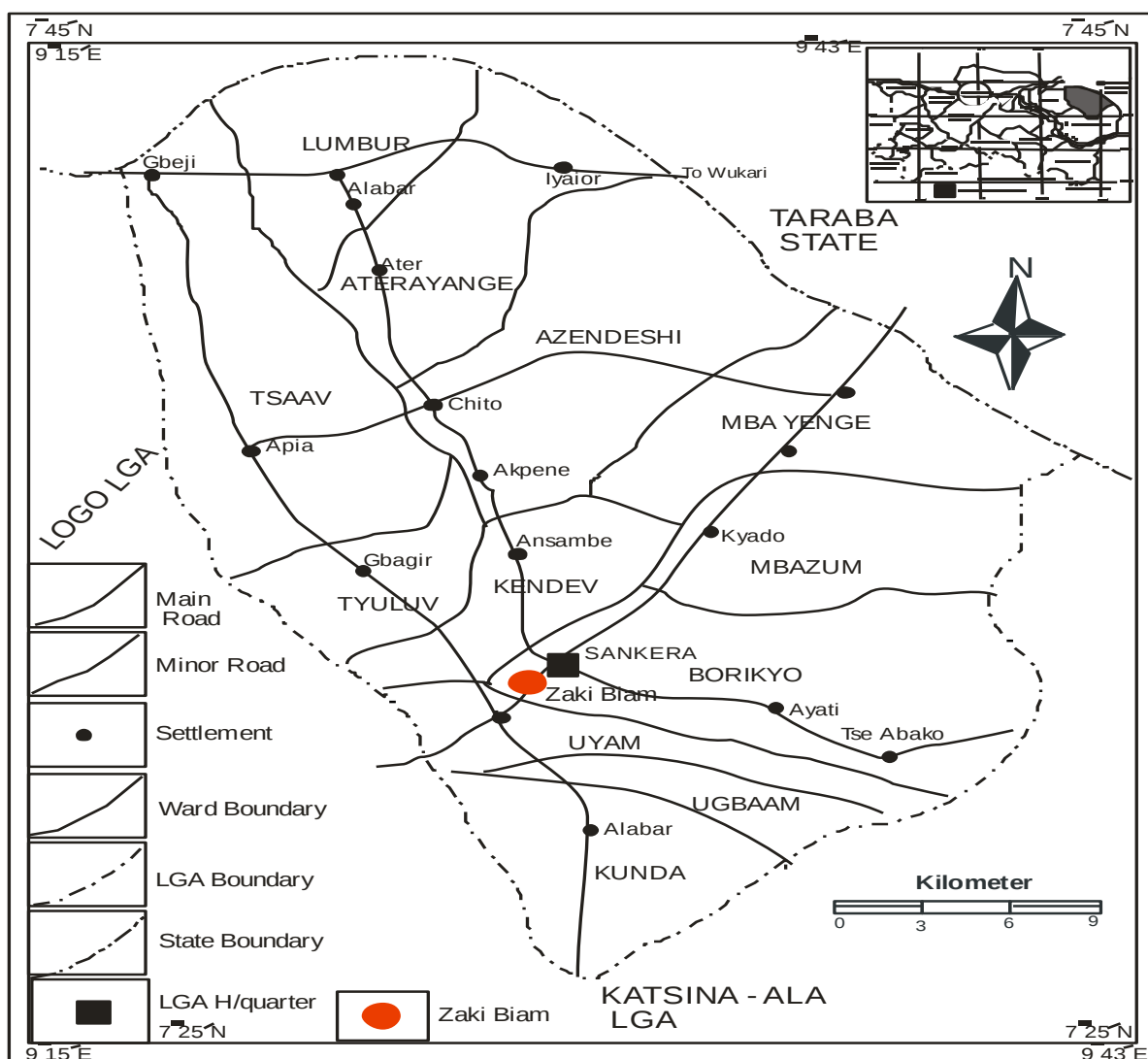


Figure 2. Map of Ukum Local Government Area.

proportion of medicinal plants 10(8.8%) and 10 (8.8%) respectively followed by Fabaceae and Euphorbiaceae at 9(7.92%) with *Ficus* in Moraceae family being the most dominant genus that provided indigenous plants in the study area for healthcare management. It is relevant to note that the leaves of these indigenous plants are the parts mostly used, although all the other parts of the indigenous plants play prominent roles in peoples' health care. On the part of ailments treated, Ulcer and Stroke utilized the highest number of plant species of five (5) each with Diabetes, toothache, rheumatism, recovery from

childbirth, malaria, bronchitis, poison, jaundice, fire burns, purging and Jedi-Jedi using only one indigenous species each for their treatment in Ukum. The high number of indigenous plants used for healthcare management recorded in the study area implied that, Ukum in Benue State is diverse in terms of medicinal plants composition. This diversity can be seen in terms of the high number of the different species and different families recorded in the area. The identification of the indigenous plants was very difficult because most of the indigenous plants are not documented in Ukum and the indigenous

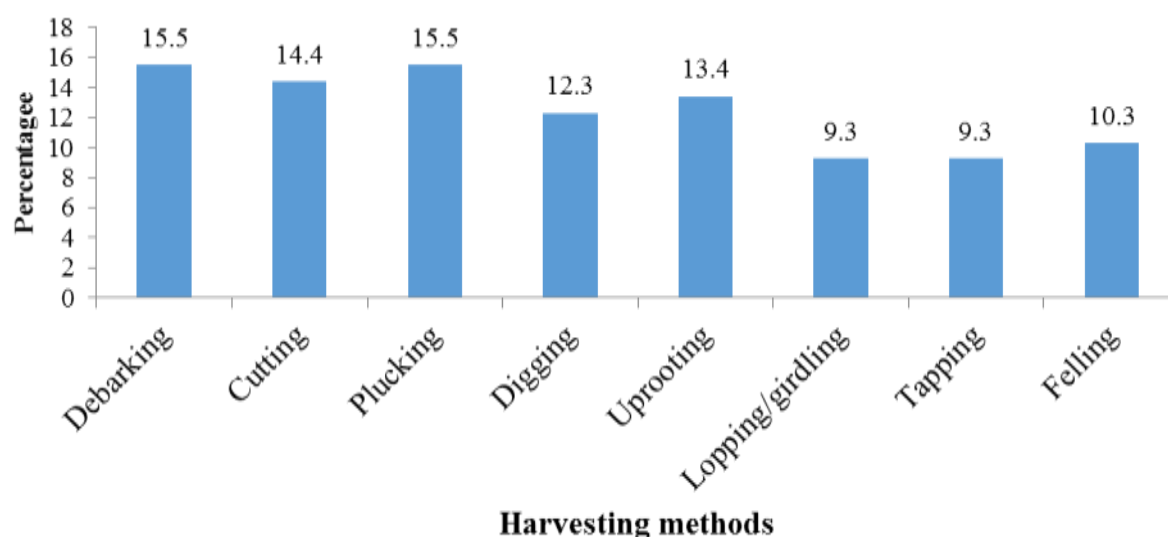


Figure 3. Methods of harvesting indigenous plants used for health care management in Ukum

Table 1. Sampling procedure and sample size.

S/N	WARDS	B	N(30%)	X
1	Tsaav	33	10	10
2	Lumbuv	44	13	11
3	Uyam	34	10	10
4	Borikyo	40	12	12
5	Mbatian	43	13	13
6	Aterayange	33	10	9
7	Ituluv	25	8	8
8	Mbayenge	38	11	11
9	Mbazun	45	14	13
10	Total	335	101	97

Source: Field Survey, (2018).

B = Base line population of herbal practitioners in the study area

N = 30% of base line population of herbalist in the study area (Actual target for questionnaire distribution in the study area).

X = Number of questionnaires retrieved from the base line population of herbalist in the study area.

knowledge of their relevance is steadily being lost. Similarly, no plantation of any indigenous plants was seen anywhere in Ukum.

Methods of harvesting indigenous plants used for health care management in Ukum

The result on methods of harvesting indigenous plants used for healthcare management in the study

area showed that 15(15.5%) of the respondents used debarking as a method of harvesting medicinal plants; 14(14.4%) used cutting method; 15(15.5%) used plucking method; 12(12.3%) used digging method; 13(13.4%) used uprooting method; 9(9.3%) used lopping/girdling method; 9(9.3%) used tapping method and 10(10.3%) used the felling method to harvest medicinal plants (Figure 2).

The result on methods of harvesting indigenous plants for healthcare management in Ukum revealed that debarking were the most prominent methods of harvesting indigenous plants for healthcare management in the study area. It should be noted here that, debarking round a tree can kill such trees while forcefully plucking can damage the entire plants in question. Also, when roots of plants are dug up, the plant collapses especially when more than enough roots are removed. The findings agreed with the submission of Kalayu et al., (2015), that harvesting methods are key to sustainable management as the method employed will tell if the forest is been managed sustainably. Tapping on the other hand involves the removal of palm tops (as in palm tree) for the palms to produce exudates such as palm wine etc. This practice is capable of killing the palms. Similarly, Lopping/girdling destroys the branches of the plant as the top is cut down denying the plant of leaves and branches respectively. For sustainability, most of the methods employed by these herbalists are not advisable as they are

Table 2. Demographic characteristics of herbal practitioners in the study area.

VARIABLES	RESPONDENTS	PERCENTAGES
Sex		
Male	73	75.3
Female	24	24.7
Sub-Total	97	100
Age		
1-15	15	15.5
16-30	17	17.5
31-45	30	30.9
45 & above	35	36.1
Sub-Total	97	100
Educational Status		
Formal	17	17.5
Informal	80	82.5
Sub-Total	97	100
LGA of origin is Ukum		
Yes	97	100
No	0	0
Sub-Total	97	100
State of origin is Benue		
Yes	97	100
No	0	0
Sub-Total	97	100
Duration of stay in Ukum		
1-5	17	17.5
6-10	20	20.6
11 & above	60	61.9
Sub-Total	97	100
Household size		
1-3	27	27.8
4-8	40	41.3
9 & above	30	30.9
Sub-Total	97	100

Source: Field Survey, (2018)

capable of making the plant go into extinction. The findings corroborate Shomkegh et al. (2016), that Methods of medicinal plant harvesting in Gboko, Kwande and Guma were mostly destructive with negative implications on the availability and conservation of the species. The findings of the study also agreed with Ayodele, (2005) that, herbal practitioners mystify their trade aside the use of destructive harvesting methods.

Logistic binary nature of factors that influence the use of indigenous plants used for healthcare management in Ukum

The result on logistic regression on factors that

influenced the use of indigenous plants for healthcare management in Ukum gave a significant fit to the data judging from the X^2 value that was significant at $P < 0.05$. the result indicated that, Extraction methods (EM) of the indigenous plants by the Herbal practitioners was the most significant factor that influenced the use of indigenous plants for healthcare management in Ukum with odds-ratio 5359.12 followed by dosage (DS) of the indigenous plants with odds-ratio 3523.51 and involvement of witchcraft (WC) with odd-ratio 253.69 respectively.

Similarly, Age (AG), Marital status (MS), Educational status (EDS), Sex (SEX), Household size (HHS), Monthly income (MI) and Monthly expenditure (ME) of the respondents with odd-ratio

Table 3. Compendium of indigenous plants used for healthcare management in Ukum.

S/N	Local Name	Botanical Name	Family	Form	Ailment treated	Part of Plant
1	Wavikyo	<i>Mimosa pigra</i> L.	Fabaceae	Shrub	Madness	Stem
	Ikyo	<i>Uvaria chamae</i> P. Beauv	Annonaceae	Shrub		Root
	Ityenger	<i>Justicia shimperi</i> Hochst	Acanthaceae	Herb		Leaves
2	Chia	<i>Daniella oliveri</i> [Rolfe] Hochst & Dalz	Cesalpiniaceae	Tree	Stroke	Leaves
	Kungureku	<i>Ocimum gratissimum</i> L.	Moringaceae	Herb		Leaves
	Haa	<i>Khaya senegalensis</i> [Desr] A. Juss	Meliaceae	Tree		Bark
	Ngaji	<i>Pterocarpus erinaceus</i> Poir.	Peridacaceae	Tree		Stem
	Giragba	<i>Pericopsis laxiflora</i> [Benth] V. Meeuw.	Papilionaceae	Tree		Bark
3	Kpine	<i>Bridellia feruginea</i> Benth	Euphorbiaceae	Tree	Swollen stomach	Root
	Ahur	<i>Annona senegalensis</i>	Annonaceae	Shrub		Root
	Jondough	<i>Lagenaria siceraria</i> [Mo1] Stand 1.	Cucurbitaceae	Tree		Root
	Kpikyeh	<i>Psorospermum senegalensis</i> Spach	Hypericaceae	Shrub		Leaves
4	Gbaaye	<i>Prosopis Africana</i> [Null. & Perr.] Taub	Fabaceae	Tree	Weak penis erection	Root
	Akinde	<i>Ficus thonningii</i>	Moraceae	Tree		Root
	Hwerbaa	<i>Grewia tenax</i> [Forssk.] Fiori	Malvaceae	Shrub		Root
5	Chiese	<i>Trema orientalis</i> [L.] U Blume	Ulmaceae	Tree	Infertility	Root
	Tur	<i>Ficus sur</i> Forssk	Moraceae	Tree		Root
	Ahur	<i>Annona senegaensis</i> Pers	Moraceae	Tree		Leaves
	Akinde	<i>Ficus thonningii</i>	Moraceae	Tree		Root
6	Kungureku	<i>Ocmum gratisimum</i>	Libiaceae	Herb	Eye pain	Leaves
	Gbaaye	<i>Prosopis Africana</i>	Fabaceae	Tree		Stem
7	Apaapa	<i>Allophyllus afrcanus</i>	Sapindaceae	Tree	Jedi jedi	Leaves
8	Ikyo	<i>Uvaria chamae</i>	Annonaceae	Herb	Stomach ache	Root
	Gbur	<i>Hannaa undulata</i> [Gull .& Perr.]	Simaroubaceae	Tree		Root
	Ahur	<i>Annona senegalensis</i>	Annonaceae	Tree		Root
	Alomade	<i>Maytenus senegalensis</i> [Lam.] Excell	Celastraceae	Shrub		Root
9	Ibua	<i>Parinari curatellifolia</i> Planch. Ex.	Chrysobalanceae	Tree	Yellow fever	Bark
	Tyembegh	<i>Kigelia Africana</i> [Lam.] Benth	Bignoniaceae	Herb		Bark
	Kpavande	<i>Cochlospermum planchonii</i> Hook. Ex.	Cochlospermaceae	Herb		Root
	Akinde	<i>Ficus thonningii</i>	Moraceae	Tree		Root

Table 3. Continue.

10	Kuegh	<i>Terminalia avicenioides</i> Gull. & Perr	Combretaceae	Tree	Cough	Leaves
	Kungureku	<i>Ocimum gratissimum</i>	Libiaceae	Herb		Leaves
	Dedooko	<i>Hibiscuss asper</i> Hook. F	Malvaceae	Herb		Whole plant
	Ahur	<i>Annona senegalensis</i>	Annonaceae	Herb		Bark
11	Kungureku	<i>Ocimum gratissimum</i>	Libiaceae	Herb	Headache	Leaves
	Giragba	<i>Pericopsis laxiflora</i>	Papillionaceae	Tree		Leaves
12	Nyihar	<i>Pillostigma thonningii</i>	Ceasalpinaceae	Tree	Purging	Bark
13	Giragba	<i>Pericopsis laxiflora</i>	Papillionaceae	Tree	Swellings	Bark
	Hwerza	<i>Grewia venusta</i> Fresen.	Malvaceae	Herb		Bark
	Tyemegh	<i>Kigelia africana</i>	Bignoniaceae	Shrub		Stem
	Irkwar-to	<i>Hymenocardia acida</i> Tul	Euphorbiaceae	Shrub		Bark
14	Azizo	<i>Fluegea Virosa</i> [Roxb. Ex wild] Voigt	Euphorbiaceae	Herb	Typhoid	Whole plant
	Ahur	<i>Annona senegalensis</i>	Annonaceae	Tree		Stem
15	Haa	<i>Khaya senegalensis</i>	Meliaceae	Tree	Dis-location	Bark
	Mkem	<i>Capsicum annuum</i>	Solanaceae	Herb		Fruit
16	Ager	<i>Cissus pulponenea</i> Gull. & Perr.	Vitaceae	Shrub	Fire-burns	Leaves
17	Tur	<i>Ficus sur</i>	Moraceae	Tree	Blood clothing	Fruit
	Kpine	<i>Bridelia ferrugena</i>	Euphorbiaceae	Tree		Leaves
	Kuegh	<i>Terminalia avicenioides</i>	Combretaceae	Tree		Root
	Liemen	<i>Entada Africana</i> Gull. & Perr.	Fabaceae	Shrub		Leaves
18	Hon	<i>Ficus ingens</i> [Miq.]	Moraceae	Tree	Diarrhoea	Leaves
	Nune	<i>Parking biglobosa</i>	Fabaceae	Tree		Leaves
	Ahur	<i>Annona senegalensis</i>	Fabaceae	Tree		Bark
19	Umanatumba	<i>Stereospermum kuntianm</i> Cham.	Bignoniaceae	Tree	Heart burn	Bark
20	Gbur	<i>Haonna undulata</i> [Gull. & Perr.]	Simaroubaceae	Tree	Jaundice	Root
21	Kpine	<i>Bridelia ferruging</i>	Euphorbiaceae	Tree	Ameobic dysentery	Bark
	Tur	<i>Ficus sur</i>	Moraceae	Tree		Bark
	Nune	<i>Parking biglobosa</i>	Fabaceae	Tree		Bark
22	Gbagbongon	<i>Burkea fricana</i>	Ceasalpinaceae	Tree	Poison	Bark
23	Haa	<i>Khaya senegalensis</i>	Meliaceae	Tree	Ulcer	Bark
	Bagbongon	<i>Burkea Africana</i>	Ceasalpinaceae	Tree		Bark
	Kumendur	<i>Sterculia setigera</i> Del.	Sterculiaceae	Tree		Bark
	Agea viha	<i>Tephrosia bracteolate</i>	Ceasalpinaceae	Tree		Bark
	Chiha	<i>Danielli oliveri</i>	Ceasalpinaceae	Tree		Leaves
24	Sohonor	<i>Mitragyna inermis</i>	Rubiaceae	Tree	Diabetes	Bark
25	Gbaaye	<i>Prosopis Africana</i>	Fabaceae	Tree	Toothache	Leaves
26	Haa	<i>Khaya senegalensis</i>	Meliaceae	Tree	Prolonged labour in women	Leaves
	Irkwar	<i>Hymenocardia acida</i>	Euphorbiaceae	Shrub		Leaves

Table 3. Continue.

	Irkwarto	<i>Crossopteryx febrifuga</i> [G. Don.]	Rubiaceae	Shrub		Leaves
	Kpine	<i>Bridelia ferruginea</i>	Euphorbiaceae	Tree		Root
27	Nyihar	<i>Pilliosigma thonningii</i>	Celastraceae	Tree	Bronchitis	Bark
28	Mho	<i>Syzygium guineensis</i>	Myrtaceae	Tree	Hookworm	Stem
	Ahur	<i>Annona senegalensis</i>	Annonaceae	Shrub		Leaves
29	Hon	<i>Ficus ingens</i>	Moraceae	Tree	Fracture	Root
	Ayaba	<i>Musa spp</i>	Musaceae	Shrub		Bark
30	Yongo	<i>Cassia seiberiana</i> DC	Fabaceae	Shrub	Malaria fever	Bark
31	Ikyo	<i>Uvaria chamae</i>	Annonaceae	Shrub	Ease of child birth	Bark
32	Tur	<i>Ficus sur</i>	Moraceae	Tree	Blood shortage	Leaves
33	Chiese	<i>Trema orientalis</i>	Ulmaceae	Shrub	Rheumatism	Leaves
34	Kyura	<i>Sarcocephalus latifolius</i>	Rubiaceae	Shrub	Fever	Leaves
	Ibohogh	<i>Gardenia erubescens</i>	Rubiaceae	Shrub		Leaves
35	Kyura	<i>Sarcocephalus latifolius</i>	Rubiaceae	Shrub	Itching	Leaves
36	Kpine	<i>Bridelia ferruginea</i>	Euphorbiaceae	Tree	Bihartziasis	Bark
	Mkem	<i>Capsicum frutescence</i>	Solanaceae	Herb		Fruit
37	Gbaaye	<i>Prosopis Africana</i>	Fabaceae	Tree	Epigastric pain	Stem
38	Mkem	<i>Capsicum frutescence</i>	Solanaceae	Herb		Fruit

Field Survey, (2018).

NB: The numbering are based on diseases or ailments cured.

0.00 do not influenced the use of indigenous plants for healthcare management in Ukum.

FIUIP_(Herbalist) = 2.099 + 8.17DS -10.20AG – 10.83MS – 6.87EDS – 2.97SEX – 4.32 HHS + 8.53EM + 5.53IWC – 9.35MI – 50.15 ME.....Equation 1
n = 97, Final Loss = 18.78 Chi-square (df, 10) = 419.48, P = 0.00

Odd-ratio (Unit charge): Constant (1.31): DS (3523.51): AG (0.00): EDS (0.00): SEX (0.00): HHS (0.00): EM (5359.12): IWC (253.69): MI (0.00): ME (0.00)..... Equation 2 (Table 4).

From the result obtained on factors that influenced the use of indigenous plants for healthcare management by Herbal practitioners in Ukum indicated that, dosage of herbal medicine, extraction methods of herbal medicine and the involvement of witchcraft(mystification of the trade) are factors that influence the use of indigenous plants for healthcare management in the study area. The findings of the study corroborated Deeks 1996: Bland and Altman (2000), that the logistic model provides information on the consequence of one variable on the other (i.e.

consequences of the factors mentioned on the use of indigenous plants for healthcare management in the study area).

SUMMARY AND CONCLUSION

The following are the major findings of the study;

- A total of eighty-eight (88) indigenous plants used for the treatment of thirty eight (38) ailments were recorded.
- Eight (8) methods of harvesting indigenous plants for healthcare management were identified.
- Three factors that influenced the use of indigenous plants for healthcare management in Ukum were determined.

RECOMMENDATIONS

Based on the major findings of the study, the followings are recommended;

- Herbal practitioners and hunters that are

Table 4. Logistic binary nature of factors that influence the use of indigenous plants for healthcare management in Ukum.

Dependent variable (FIUIP): Factors that influence use of indigenous plants for healthcare management in the study area (Presence =1: Absence =0)

Independent Variables	Coefficient	Odds ratio
Whether dosage of herbal medicine influence use of indigenous plants for healthcare management	8.17	3523.51*
Whether age of respondents influence use of indigenous plants for healthcare management	-10.20	0.00ns
Whether marital status of respondents influence use of indigenous plants for healthcare management	-10.83	0.00ns
Whether educational status of respondents influences use of indigenous plants for healthcare management	-6.87	0.00ns
Whether sex of respondents influences use of indigenous plants for healthcare management	-2.97	0.00ns
Whether household size of the respondents influence use of indigenous plants for healthcare management	-4.32	0.00ns
Whether extraction method influence use of indigenous plants for healthcare management	8.53	5359.12*
Whether involvement of witchcraft influence use of indigenous plants for healthcare management	5.53	253.69*
Whether monthly income of the respondents influence use of indigenous plants for healthcare management	-9.35	0.00ns
Whether monthly expenditure of the respondents influence use of indigenous plants for healthcare management	-50.15	0.00ns

Model $X^2(df=10) = 419.48^*$

P<0.05

ns = Non- significant

*= Significant

familiar with the names of indigenous plants used for healthcare management should disseminate such knowledge to their children, servants and other community members to prevent the loss of the knowledge.

➤ All the districts and wards in Ukum Local Government Area should be encouraged to grow indigenous plants that are used for healthcare management on their farms around their houses and as plantations to prevent them from extinction.

➤ Seedlings of indigenous plants can be raised in nurseries by Benue State Government and given free to Ukum Local Government Area communities for onward plantation on their farms and around their houses. If people of Ukum plant these seedlings on their farms and around their houses, the pressure on wild indigenous plants used for health care management will be reduced.

➤ Harvesting methods that uproot an entire plant or that takes more roots than necessary or

cutting of tree tops or palmtops should be avoided as this is capable of killing the entire plants.

➤ De-barking round a tree by herbal practitioners is an attempt to kill the plant and should be avoided. However, where de-barking is to be done, debark only one portion and allow the other portion which should be de-barked when the already debarked portion has regained its part.

➤ There should be a standardized dosage in traditional medicine. This should be followed by an improved extraction method that should not be mystified.

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