Research Article

ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS IMPORTANCE IN FOUR LOCAL GOVERNMENT OF OYO STATE, NIGERIA

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Abstract

An Ethnobotanical survey of medicinal plants used in Ona Ara, Ido, Egbeda and Lagelu Local Government Areas of Oyo State, Nigeria through administration of structured questionnaires and oral interview. The respondents include herb sellers, farmers, traditional medicine practitioners, and indigenes/residents. Respondents were able to provide local names of the plant species and their medicinal uses. The prevalent disease conditions traditional healers uses these plants for includes: anti-malaria, cold, anti-fungal, Arthritis , skin problems, fever, blood pressure control, measles, cough, headache, diarrhea, anti-bacteria, fertility problems, toothache, common cold, measles etc. The result shows that majority of the respondents (71.15 %) were males and married (73.46%) while most (66.92%) were above 40 years of age. A total of 67 species of medicinal plants belonging to 37 families obtained from 260 respondents were identified and documented. Among these plants, 54% tree, 16% shrub and 30% herbs were recorded. The most dominant families in the study were Fabaceae (11.9%), Asteraceae (7.5%), Malvaceae (5.9%), Anarcardiceae, Rubiaceae, Poaceae, Zingiberaceae, Euphorbiaceae (4.5% each), Bombacaceae, Arecaceae, Annonaceae, Apocynaceae, Moraceae, Leguminosae (2.9%each).The other plant families have one member each in the distribution of species within the families. The survey also observed that the following plant parts were used; leaves, stems, flowers, bulbs, barks, roots, fruit, oil, seeds/nuts, juice/sap, rhizome and whole plant. Percentage representation of the plant parts used revealed that leaf was most frequently used. The methods of preparation mostly preferred are decoction and infusion, others include maceration, cooking as meal/soup, crushing/grinding, and burning/roasting. The R^2 value of 0.015 indicates that a very small percentage of the variables does not have effect on the choice of plants parts used for medicine. It is therefore concluded that most persons in the rural area prefer the use of medicinal plants in the treatment of diseases for the reason of affordability, availability, effectiveness and accessibility of practitioners. It is recommended that Government should create awareness and organize programmes against deforestation. Awareness regarding the conservation status of rare medicinal plants, domestication strategies as well as appropriate methods of exploitation is very important for further studies to ensure availability of these plants and a sustainable utilization.

Keywords: Ethnobotanical survey, medicinal plants, traditional medicine, Nigeria

INTRODUCTION

Ethnobotany is the scientific study of relationship that exists between people and plants. It interfaces between indigenous people and their wild exploit of plants around them, which is a significant aspect of biological diversity conservation. (Adebayo-Tayo et al., 2010). The attempt by mankind to use plant products to cure diseases and relieve physical suffering is as old as creation (Acharya ., 2008). Human have derived many uses and benefits from the plants indigenous to their locality and have resorted to nature, mainly plants for medicine and health sources (Acharya et al., 2008). Ethnomedicinal plants are utilised for the treatments of diseases and disorders like dysentery, skin diseases, hypertension, headache, boils and blisters, rheumatism and gout, arthritis, piles, jaundice, haemorrhoids, ophthalmic diseases, fever, toothache, diarrhoea, bone fracture, cough, insect and snake bites, worm infection, cuts and wounds, cold and catarrh, bronchitis, asthma, leprosy etc. (Shukla et al., 1972).

The indigenous medicinal plants form an important component of the natural wealth and culture of a geographical area. The study of plant began with tribal efforts to identify edibile, medicinal and poisonous plants making botany one of the oldest sciences, of all the species of plants studied only about 60 have been evaluated phytochemically Adesina (2009). Plants have been used as drugs for centuries, initially as traditional preparations (Aries et al., 2007). The use of plant species as traditional medicines provides a real substitute to orthodox healthcare services for rural communities of the developing nations (Bannerman et al., 1983). It has been estimated that around 80% of the population in developing countries depends on traditional medicines for primary health care system. These traditional medicines are cost-effective, safe and affordable (Breckinridge 2009). Globally, approximately 85% of the traditional medicines used in primary healthcare are derived from plant species (Casey et al., 2007). Therefore, medicinal plants are the indigenous heritage of global importance (Chinsembu et al., 2010). Modern societies depend on chemical agents in plants for 25% of prescription of drug and nearly all recreational chemicals, examples are caffeine in coffee, the nicotine in tobacco and theophylline in tea all found in plant (Adebisi 1999). Some

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phytochemicals have advantageous effects on long term health when humans consume them and can be used effectively to treat human disease. This phytochemicals are separated into primary metabolites such as sugar and fats, found in all plant and secondary metabolites which mare in smaller range of plant serving specific function, for example secondary metabolites as well as others are some pheromones used to draw insects for pollination. It is secondary metabolites on pigments which can have therapeutic actions in humans and can be refined to manufacture drugs. Examples are insulin (from root of dahlias), quinine (from cinchona), morphine and codeine (from poppy) and diqoxin (from foxylove) (Tesfaye *et al*., 2009). Chemical compound in plant mediate their consequence on human body through identical processes to those already known for the chemical compound in conventional drugs; thus herbal drugs do not differ greatly from conventional drugs in terms of their working pattern (Tesfaye *et al*., 2009). Fewer than 5% of tropical forest plant species have been examined for their chemical compounds and medicinal value. This left great potential for even more discovery, but also the potential for great loss as forests are felled around the globe and unstudied species are lost to extinction (Djukanovic *et al*., 1975). The study of Ethnobotanical survey of medicinal plants use aimed at identifying, reviewing and documenting major medicinal plants use for the treatment of various ailments. It also investigated the frequency and usage of selected Medicinal Plants, ascertained the forms of plants used for treatment of diseases and evaluated the Routes of administration of selected ethnobotanical medicinal plants.

MATERIALS AND METHODS

The study area

The Survey Area was carried out in four local government of Oyo State in Nigeria, namely, Ona Ara, Ido, Egbeda and Lagelu Local Government respectively. Ona Ara is a Local Government Area in Oyo State, Nigeria. Its headquarters are in the town of Akanran. It has an area of 290 km^2 and a population of 265,059 at the 2006 census. Ido is a Local Government Area in Oyo State, Nigeria. Its headquarters are in the town of Ido. It has an area of 986 km^2 and a population of 103,261 at the 2006. Egbeda is a Local Government Area in Oyo State, Nigeria. Its headquarters are in the town of Egbeda. Egbeda local government was carved out Lagelu Local government in 1989. Lagelu is a Local Government Area in Oyo State, Nigeria. Its headquarters are in the town of Iyana Offa. It has an area of 338 km^2 and a population of 147,957 at the 2006 census. The village called Eleruko also falls under this local government. (https://en. wikipedia.org › wiki).

Data Collection

The Enthnobotanical survey was conducted between June 2021 and August 2021 to obtain information about medicinal plants used for the treatment of diseases. The information gathered was based on oral interview also with the aid of structured questionnaire administered to respondent that are above 17years of age. This age bracket was chosen because the researcher wants responses from everyone who has knowledge of medicinal plants found in their environment. Only data from willing respondent were documented. Plants specimens were identified and authenticated by using their local names as well

as standard text. A total number of 280 questionnaires was administered.

Data Analysis

Descriptive statistics was used in analysing the data collected, this include mean and tables were used to summarize the data. The analyzed data was presented in descriptive statistics using tables, charts and frequency.

Hypothesis:

Ho1: There is no significant relationship between their social economic characteristics and method of preparation of medicinal plants.

Ho2: There is no significant relationship between age and their choice of plant parts for medicinal use.

RESULTS

A total number of 280 questionnaires was administered out of which only 260 was recovered. Result from table 1 shows that majority of the respondents (71.15 %) were males, while most (66.92%) were above 40 years of age. In general, the gender was not significantly correlated to age and plant knowledge (Erasto P. *et al* 2005). According to table 1, majority of the respondents (73.46%) were married. The educational level of the respondents shows that majority had primary education about112 (43.07%), while 89 (34.23%) attained O level, while 36 (13.85%) had tertiary education and 23 (8.85%) had no formal education. In the following enumeration, plants are arranged, followed by the family name, local names, habit, part of plant used, and their medicinal uses. A total of 67 species of medicinal plants belonging to 37 families obtained from 260 respondents were identified and documented. Among these plants, 54% tree, 16% shrub and 30% herbs were recorded. The results show that tree was the most used forms of plants for the treatment as shown in Figure 1.

Table 1. Demographic structure of respondents

Socio-economic characteristics	Frequency	Percentage
Gender		
Male	185	71.15
Female	75	28.85
Total	260	100
Age(years)		
18-39	47	18.08
40-59	174	66.92
60-89	39	15
Total	260	100
Marital Status		
Single	21	8.08
Married	191	73.46
Divorced	48	18.46
Total	260	100
Education		
No Formal	23	8.85
Primary	112	43.07
Secondary	89	34.23
Tertiary	36	13.85
Total	260	100
Religion		
Christian	145	55.77
Muslim	78	30
Traditionalist	37	14.23
Total	260	100
Residence		
Urban	73	28.08
Rural	187	71.92
Total	260	100

Table 2. Medicinal Plant used for treatment of diseases in the study area

S/N	Scientific Name	Family Name	Local Name	Plant part used	Habit	Medicinal Uses
1	Calotropis procera	Apocynaceae	Bomubomu	Bark, Latex, Flower, Leaves	Shrub	Cough, Jaundice, Measles, Asthma, Antidote for snake bite
2	Triplochiton scleroxylon	Malvaceae	Arere	Bark	Tree	Backache
3	Canna indica	Cannaceae	Ido	Rhizomes, Root	Herb	Local birth control, Malaria, Diarrhoea, Menstual pain
4	Physalis angulata	Solanaceae	Koropo	Fruits, Leaves, All parts	Herb	Infertility, Fever, Asthma, Diarrhoea, Rheumatism, Jaundice, Diabetes, Skin sore
5	Daniellia oliveri a	Fabaceae	Emiya	Bark	Tree	Stimulant, Epilepsy
6	Jatropha curcas	Euphorbiaceae	Lapalapa	Leaves, Sap, Stem, Root	Shrub	Hepatitis, Wounds, Headlices, Dysentary
7	Senna alata	Fabaceae	Asunwon	Leaves	Shrub	Eczema, Pile, Convulsion
8	Azardirachta indica	Meliaceae	Dongoyaro	Leaves, Bark, Stem	Tree	Hepatitis, Fever, Itching, Antimalaria
9	Vernoniaamy dalina	Asteraceae	Ewuro	Leaves	Shrub	Chicken pox, Rabbies, Measles, Diarrhoea, Malaria, Cough
10	Cocos nucifera	Arecaceae	Agbon	Oil, Bark	Tree	Skin treatment
11	Tridax procumbens	Asteraceae	Sabaruma	Leaves, Root	Herb	Itching, Wound healing
12	Talinum triangulare	Portulaceae	Gbure	Leaves	Herb	Pregnant women to prevent anaemia, blood booster
13	Moringa oleifera	Moringaceae	Moringa	Leaves, Root	Tree	Hepatitis, Rheumatism, Cough
14	Aleo vera	Leliaceae	Aleovera	Leaves, Juice	Herb	Constipation, to clear Skin
15	Sida acuta	Malvaceae	Isekotu	Leave, Stem	Herb	Tuberculosis, Cold
16	Ficus exasperate	Moraceae	Epin	Leaves	Tree	Boil, wound healing
17	Parkia biglobosa	Mimosaceae	Iru	Leaves,Seeds, Stem, Bark	Tree	Chicken pox, Toothache, Fever, Sore eyes
18	Amaranthus spinosus	Amaranthaceae	Dagunro	Leaves, Root	Shrub	Boil, snake bite, Diarrhoea
19	Aspilia Africana	Asteraceae	Wild sun flower	Leaves	Herb	Wound, Cough
20	Vitellaria paradoxa	Sapotaceae	Ori	Seeds/Nuts	Tree	Common cold, pain reliever, Skin care
21	Nauclea latifolia	Rubiaceae	Egbesi	Leaves, Stem, Bark	Tree	Chicken pox, Antimalaria, Measles
22	Chromolena odorata	Asteraceae	Ewe Ajeobale	Leaves	Shrub	Wound, Haemorrhage, Fever
23	Bambusa vulgaris	Poaceae	Bamboo	Leaves	Tree	Rheumatism, Rashes
24	Mangifera indica	Anarcardiceae	Mangoro	Leaves, Bark, Stem	Tree	Malaria
25	Annona senegalensis	Annonaceae	Abo	Leaves	Tree	Measles, skin disease
26	Carica papaya	Caricaceae	Ibepe	Leaves	Herb	Measles, Jaundice
27	Manihot esculenta	Euphorbiaceae	Egee	Leaves	Herb	Measles, Scorpion sting
28	Psidium guajava	Myrtaceae	Gurofa	Leaves	Tree	Measles, Dysentary, Cough, Convulsion
29	Zingiber officinale	Zingiberaceae	Atale	Rhizomes	Herb	Common cold, Pain reliever, cough
30	Aframomum melegueta	Zingiberaceae	Ataare	Leaves, Seed	Herb	Common cold, Female infertility, Stomach ache
31	Elaeis guineensis	Arecaceae	Epo	Nuts, Stem bark	Tree	Detoxifier, Anti oxidant, Poison antidote
32	Treculia Africana	Moraceae	Afon	Root, Fruit	Tree	Cough, Diabetes
33	Adansonia digitata	Bombacaceae	Ose	Leaves, Bark, Seeds	Tree	Arthritis, Malaria, Immune stimulant, Catarrh
34	Albizia lebbeck	Leguminosae	Igbagbo	Bark, Leaves,	Tree	Hernia, Cough
35	Albizia glaberima	Leguminosae	Ayunre	Bark, Root	Tree	Epilepsy, Anaemia
36	Baphia nitida	Fabaceae	Irosun	Leaves	Tree	Constipation, Ringworm, Small pox
37	Ceiba petandra	Bombacaceae	Araba	Bark, Leaves,	Tree	Stomach ache, Wound
38	Delonix regia	Fabaceae	Sekeseke	Leaves	Tree	Astringent, Piles
39	Gliricidia sepium	Fabaceae	Agunmaniye	Leaves, Bark	Shrub	Rheumatism
40	Glyphea brevis	Tiliaceae	Atori	Leaves, Root, Fruit	Shrub	Malaria, Convulsion
41	Morinda lucida	Rubiaceae	Oruwo	Leaves	Tree	Antimalaria
42	Irvingia gabonensis	Irvingiaceae	Oro	Leaves, Seeds	Tree	Infertility, Oedema
43	Naucleadidderichii	Rubiaceae	Opepe	Root, Bark	Tree	Arthritis
44	Pterocarpus osun	Fabaceae	Osun, Gbingbin	Stem, Leaves	Tree	Antiageing, Skin treatment
45	Spondia mombin	Anarcardiceae	Iyeye	Bark, Leaves,	Tree	Diabetes, Wond healing
46	Sterculia setigera	Sterculiaceae	Oseawere	Gum, Leaves. Bark	Tree	Constipation, Cough
47	Tetrapleura tetraptera	Fabaceae	Aidan	Bark, Fruit	Tree	Antisickling, Arthritis
48	Anthocleista djalonesis	Loganiaceae	Shapo	Leaves, Stem	Tree	Jaundice, Stomach ache
49	Annona muricata	Annonaceae	Abo/ Ebo	Leaves	Tree	Detoxifier, Yellow fever
50	Anacardium occidentale	Anarcardiceae	Kasu	Bark,	Tree	Fever, Diarrhoea
51	Garcina kola	Clusiaceae	Orogbo	Seeds, Leaves	Tree	Cough, Impotence
52	Cynodon dactylon	Poaceae	Kookoigba	Leaves	Herb	Quick delivery,Fractures
53	Bryophyllum pinnatum	Crassulaceae	Abamoda	Leaves	Herb	Eczema, Sores healing
54	Terminalia catapa	Combretaceae	Furuti	Leaves	Tree	Hypertension, Skin disease
55	Dialium guineense	Fabaceae	Awin	Stem, Bark, Leaves	Shrub	Hypertension, toothache, Cough
56	Cola acuminate	Malvaceae	Obi	Nuts, Bark	Tree	Cough, toothache, headache, constipation
57	Occimum gratissimum	Lamiaceae	Efinrin	Leaves, Stem	Shrub	Jaundice, Convulsion, Headache, Cold
58	Curcuma longa	Zingiberaceae	Atale pupa/ Ajo	Rhizomes	Herb	Cough, Diabetes, Arthritis, Itchy body
59	Cymbopogon citratus	Poaceae	Kookooba	Leaves	Herb	Ringworm, Chicken pox, Skin infection, High BP
60	Euphorbia hirta	Euphorbiaceae	Akunesan	Leaves	Herb	Boil, Skin disease, Wounds, Cough, Asthma
61	Corchorus olitorius	Malvaceae	Ewedu	Leaves, Root	Herb	Measles, Rashes, Pile, fever
62	Ageratum conyzoides	Asteraceae	Imiesu/Goat weed	Leaves	Shrub	Frontal headache, Boil, Pneumonia, Wounds, Colic
63	Musa paradisiacal	Musaceae	Ogede	Leaves, Fruit, Stem	Herb	Cough, Goiter, Indigestion, Diarrhoea
64	Piper guineense	Piperaceae	Iyere	Leaves, Seeds	Herb	Fibroid, Gonorrhoea, Cough, fight infection
65	Allium cepa	Amaryllidaceae	Alubosa	Bulb	Herb	Snake bite, Asthma, Hepatitis, Indigestion, Stomach upset. Mouth sore
66	Rauwolifia vomitoria	Apocynaceae	Asofeyeje	Leaves, Root, Stem	Tree	Convulsion, Mental illness, Arthritis, Weak erection
67	Newbouldia laevis	Bignoniaceae	Akoko	Leaves, Bark, Root	Tree	Malaria, Fever, Infertility, Arthritis, Oedema

Observation from the ethnomedicinal survey showed that most of the plants are used for different ailments in different localities. The most dominant families in the study were Fabaceae (22%), Asteraceae (14%), Malvaceae (11%), Anarcardiceae, Rubiaceae, Poaceae, Zingiberaceae, Euphorbiaceae (8% each), Bombacaceae, Arecaceae, Annonaceae, Apocynaceae, Moraceae, Leguminosae (5%each). Table 3.

Other families with low number includes: Cannaceae, Caricaceae, Clusiaceae, Combretaceae, Irvingiaceae, Lamiaceae, Amaranthaceae, Amaryllidaceae, Moringaceae, Musaceae, Myrtaceae, Portulaceae, Leliaceae, Loganiaceae, Meliaceae, Mimosaceae, Piperaceae, Solanaceae, Sapotaceae, Tiliaceae , Bignoniaceae, Sterculiaceae.

From the result, the prevalent disease conditions traditional healers uses these plants includes: anti-malaria, cold, anti-fungal, Arthritis , skin problems, fever, blood pressure control, measles, cough, headache, diarrhea, anti-bacteria, fertility problems, toothache, stomach ache, wounds, skin treatment, diabetes and viral infection as shown Table 2. Plants used in treatment of malaria, fever and diabetes were the most recurrent. Malaria was the prevalent disease condition treated with medicinal plants as shown in table 2. Malaria is one of the world's most important parasitic disease and a leading cause of death especially in developing countries leading to about 1.2 million estimated deaths each year in Africa (WHO, 2014), with pregnant women and children below 5 years being mostly affected. Knowing that the prevalence of malaria and fever has been on high side, probably due to the presence of bushes and stagnant water leading to high density of mosquitoes around the vicinity.

Table 3. Distribution of Species within the Families

| Family	Frequency	%
Fabaceae	8	11.9
Asteraceae	5	7.5
Malvaceae	4	5.9
Anarcardiceae	3	4.5
Rubiaceae	3	4.5
Poaceae	3	4.5
Zingiberaceae	3	4.5
Euphorbiaceae	3	4.5
Bombacaceae	2	2.9
Arecaceae	2	2.9
Annonaceae	2	2.9
Apocynaceae	2	2.9
Moraceae	2	2.9
Leguminosae	2	2.9
Cannaceae	1	1.4
Caricaceae	1	1.4
Clusiaceae	1	1.4
Combretaceae	1	1.4
Crassulaceae	1	1.4
Irvingiaceae	1	1.4
Lamiaceae	1	1.4
Amaranthaceae	1	1.4
Amaryllidaceae	1	1.4
Moringaceae	1	1.4
Musaceae	1	1.4
Myrtaceae	1	1.4
Portulaceae	1	1.4
Leliaceae	1	1.4
Loganiaceae	1	1.4
Meliaceae	1	1.4
Mimosaceae	1	1.4
Piperaceae	1	1.4
Solanaceae	1	1.4
Sapotaceae	1	1.4
Tiliaceae	1	1.4
Bignoniaceae	1	1.4
Sterculiaceae	1	1.4
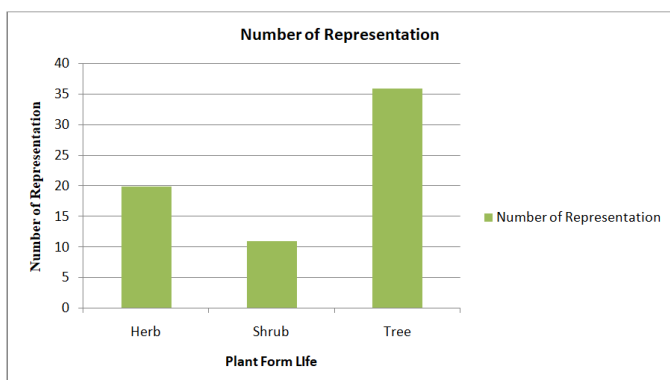
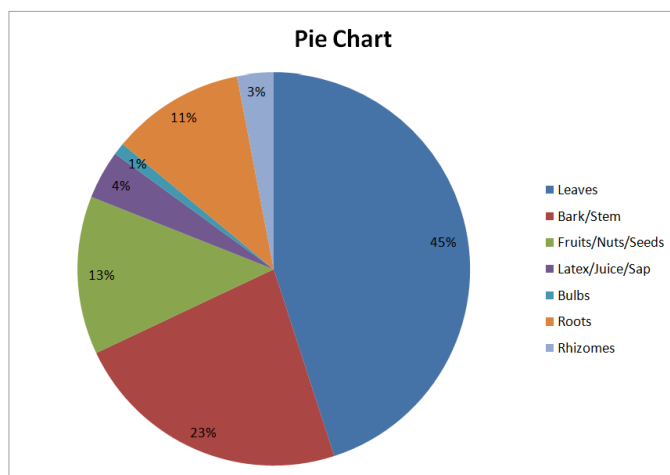**Figure 1. Bar chart showing the frequency of plant life form**

Figure 2. Pie Chart showing the percentage occurrence of the plant parts
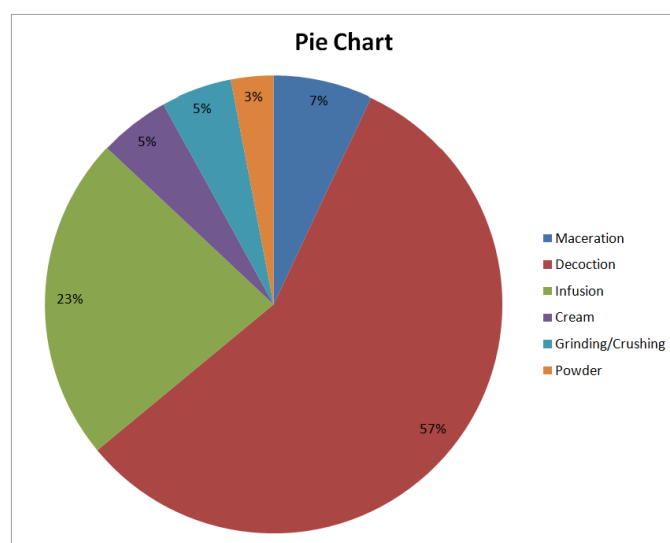

Figure 3. Pie Chart showing the percentage occurrence of the method of preparation of medicinal plants

The survey also observed that the following plant parts were used; leaves, stems, flowers, bulbs, barks, roots, fruit, oil, seeds/nuts, juice/sap, rhizome and whole plant. As seen in table 3 and figure 2, Percentage representation of the plant parts used revealed that leaf was most frequently used. This may be as a result of the easy access to the extract from leaf as compared to the other parts (Sanjeet *et al.,* 2012) It was observed that recipes are prepared from combination of different parts from two or more plant species including leaves, seeds and stem (bark). The methods of preparation mostly preferred are decoction and infusion, others include maceration, cooking as meal/soup, crushing/grinding, and burning/roasting Figure 3. Decoction was used mainly for children and exceptional persons who would want to avoid alcohol. This conforms to the survey carried out in Plateau of Allada, Benin (West Africa) where decoction (79%) was the main mode of preparation and the survey carried out among the Yoruba tribe of South Western Nigeria which also showed decoction (90.4%) was the frequently used method of anti-viral herbal preparation (Igoli J. *et al.,* 2005). Also cooking as soup is an embracing method of preparation (Figure 3). The structured questionnaire revealed that preferred method of herbal administration in study areas include; drinking, external application (bathing), steam inhalation, steam covering, cream and paste.

Table 4. Regression analysis of contribution of selected independent variables to the dependent variable

Variables	β – value	t – value	p-value	Remark
(Constant)	2.802	3.826	0.000	
Gender of respondents	-.157	-.758	.449	NS
Age of respondents	-.103	-.631	.529	NS
Marital Status of Respondents	.075	.407	.684	NS
Educational Status of Respondents	-.004	.034	.973	NS
Religion of Respondents	-071	-.546	.585	NS
Residence of Respondents	-.292	-1.398	.163	NS
Summary				
R – value	.122			
R^2	.015			
Adjusted R Square	-.009			
Standard Error of the estimated	1.493			
F – value	.633			
P – value	.704			

*Significant at $p \leq 0.05$
Source: Field survey, 2020

The analysis shows no significant relationship between their social economic characteristics and method of preparation of medicinal plants since the p-values gotten were greater than 0.05. There is also no significant relationship between age and their choice of plant parts for medicinal use. This means that age of respondents does not significantly predicts their choices of plants parts for medicinal use. The R^2 value of 0.015 indicates that a very small percentage of the variables does not have effect on the choice of plants parts used for medicine.

Table 5. PPMC analysis between religion of respondents and perceived and occurrence of plant part used for medicinal

Variables	r-value	p-value	Decision
Motivational factor	0.244	0.051	Significant

Source: Field survey, 2021.

Conclusion and Recommendations

The ethno botanical of medicinal plants study revealed that there was high diversity of medicinal plants and traditional knowledge about the use, preparation and applications of these medicinal plants in study areas. It is clear from current study that fever/malaria appears to be the most frequently treated ailment with medicinal plants, with leaves being the most used plant part, trees as the most frequently used form and decoction as the most frequent method of preparation. This study allows for identifying many high value medicinal plant species, indicating high potential for economic development through sustainable collection of these medicinal plants research. Knowledge of the use of plants as medicines has been found mostly with the older generation with few youth showing an interest. This may not enhance continuity in the use of these plants if such elders' are no more even as the decline on the use of plants by the younger generation may gradually lead to the extinction of indigenous knowledge associated with medicinal plants. It is concluded that most persons in the rural area prefer the use of medicinal plants in the treatment of diseases for the reason of affordability, availability, effectiveness and accessibility of practitioners. It is recommended that Government should create awareness and organize programmes against deforestation, because some of the plants mentioned are gradually going into extinction and are no more available in residential areas. The pharmacological validation and phytochemical characterization of these plants should to be carried out. Also, in order to prevent overexploitation that could lead to extinction, efforts should be made to conserve natural resources and to domesticate selected plant species which are commonly used among the herbal practitioners. Awareness regarding the conservation status of rare medicinal plants, domestication strategies as well as appropriate methods of exploitation is very important for further studies to ensure availability of these plants and a sustainable utilization. The sustainable cultivation of medicinal herbs could facilitate industrial scale processing.

REFERENCES

Acharya D, Shrivastava A (2008) Indigenous Herbal Medicines: Tribal Formulations and Traditional Herbal Practices. Aavishkar Publishers Distributor, Jaipur, India. Page no: 440.

Adebayo-Tayo, B.C., Adegoke, A.A., Okoh, A.I. and Ajibesin, K.K. Rationalizing some medicinal plants used in the treatments of skin diseases. *African Journal of Microbiology Research* 2010; 10:958-963.

Adebisi, L.A. Biodiversity conservation and Ethnobotany of selected sacred groves in Osun State, Department of forest Resources Management, Ph.D Thesis, University of Ibadan, Nigeria 1999; 198pp.

Adesina SK (2009) Traditional Medical Care in Nigeria. Online Nigeria, Port Harcourt, Nigeria.

Aries MJ, Joosten H, Wagdan HH, Van der Geest S (2007) Fracture treatment by Bonesetters in Central Ghana: Patients explain their choices and experiences. Trad Med Health 12: 564-574.

Bannerman RH, Burtun J, Chen WC (1983) Traditional Medicine and Health Administrators and Practitioners, WHO, Geneva, Switzerland Page no: 342.

Breckinridge Juliana (2009) www.Article Doctor.com. Disadvantage of herbal medicine.

Casey MG, Adams J, Sibbritt D (2007) An examination of the prescription and dispensing of medicine by Western Herbal Therapist: a national survey in Australia. Complement Ther Med 15: 13-20.

Chinsembu KC, Marius H (2010) An ethnobotanical survey of plants used to manage HIV/AIDS opportunistic infections in Katima Mulilo, Caprivi region, Namibia. Journal of Ethnobioloy and Ethnomedicine 6:25.

Djukanovic V, Mach EP (1975). Alternative Approach to Health Needs in Developing Countries- A joint UNICEF-WHO study. WHO, Geneva, Page no: 10-26.

Erasto P, Adebola P, Grierson DS, Afolayan AJ (2005) Ethnobotanical Study of Plants used for the treatment of Diabetes in the Eastern Cape Province, South Africa. African Journal of Biotechnology 4: 1458-1460.

Igoli J, Ogaji G, Tor-Anyiin TA, Igoli NP (2005) Traditional Medicine Practice Among the Igede People of Nigeria, Part II. Afr J Traditional, Complementary and Alternative Medicines 2: 134 - 152.

Sanjeet, K., Jena, P.K., Sabnam, S., Kumari, M. and Tripathy, P.K. Study of plants used against the skin diseases with special reference to *Cassia fistula L.* among the king (DongariaKhandha) of Niyamgiri.India. *International Journal Drug Development and Research* 2012; 4(2): 256-264.

Shukla, R.S. and Chandel, P.S. Plant ecology including ethnobotany and soil science. 3rd Edition Chand and Company New Delhi 1972; 411pp.

Tesfaye, H.D. and Zemede, A.W. An Ethnobotanical study of medicinal plants used by local people in the lowlands of Konta Special Woreda, Southern nation's nationalities and people's regional state, Ethiopia. *Journal of Ethnobiology* 2009; 5: 26-31.

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