

*Full Length Research Paper*

# Exploring traditional healthcare practices: Ethnobotanical study of medicinal plants in Abeokuta, Ogun State, Nigeria

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An ethnobotanical survey of medicinal plants used in traditional health care delivery system in some selected towns of Ogun State, Nigeria was carried out to obtain useful information on their uses and potentials. Ethnobotanical data were collected by oral interview with the aid of a semi-structured questionnaire administered to 50 respondents made up of traditional medical practitioners (TMPs), herbalists and herb sellers. A total of 58 plant species belonging to 34 families were found to be useful in the treatment of various ailments such as asthma, cough, yellow fever, tuberculosis, measles, malaria, ringworm, boil, eczema, typhoid and diabetes. Recipes used in the treatment of these ailments were documented. Herbal remedies were either prepared from dry or freshly collected plants while the traditional solvent of choice included water, pure honey, lime, alcohol and aqueous extracts from fermented maize. The main methods of preparation are decoction and infusion while method of administration ranges from 3 to 5 cl of drinking cup, 2 to 3 times daily. The survey revealed that the leaves component accounted for the majority of the part used for herbal preparations. Residents in the study areas find the traditional medicine cheaper as compared to orthodox medicine. It is therefore implicated that conscientious efforts should be made to conserve medicinal plant genetic resources to ensure continued access to these plant materials while efforts should be made to reduce pressures on the remaining germplasm.

**Key words:** Ethnobotany, survey, medicinal plant, Abeokuta, Nigeria.

## INTRODUCTION

The word "ethno" means the way people see the world . When used as a prefix in an academic discipline such as botany or pharmacology, it implies that the researcher is exploring the ordinary man's (native of an environment) perception of cultural, natural or scientific knowledge (Martin, 1995). Ethnobotany is the study of useful plants prior to commercial exploitation and eventful domestication. It is based on the knowledge of plants by the local people and their usefulness as understood by the people of a particular ethnic group, since information concerning a particular plant varies from one ethnic group to another (Igoli et al., 2005). The use of medicinal plants as remedies is common and widespread in Nigeria.

Olajide (2003) reported that Nigerian vegetations are naturally endowed with arrays of floristic composition of different plant forms including trees, shrubs, herbs and other non-wood forest resources. Within the natural forest abound several valuable non-timber resources of edible and highly nutritious plants whose fruits, twigs, barks, roots, gum, latex or dyes are of medicinal value (Owonubi and Otegbeye, 2004). Mgeni (1991) opined that with the unique diversity of plant and animal life, tropical rainforest represents biologically renewable resources of food, medicine and fuel if well managed.

Traditionally, the use of plants in curing illnesses has deep roots in man's history (Grabley and Thiericke, 1999). Pachter (1994) submitted that traditional medicinal treatments often provide culturally familiar techniques that treat both the physical and spiritual condition of an individual. This provides the need for the integration of

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traditional medicine into national health care system. Several workers have conducted ethnobotanical surveys among various tribes of the African continent and the rest part of the world (Adjanohoun et al., 1991; Gbolade and Soremekun, 1998; Rashid, 2001; Gbolade, 2000; Ajaiyeoba et al., 2006; Khan and Rashid, 2006) in search of plants with antibacterial, antiviral and antifungal properties. The medicinal values of these plants lie in some chemical substances they contain that produce a definite physiological action on the human body (Edeoga et al., 2002).

Ethnobotanical surveys are important in order to understand the social-cultural and economic factors influencing ideas and actions concerning health and illness and also to get information on type of diseases and health problems prevalent among the people of a particular locality. Such studies, as suggested by Lawal et al. (2010), may help to provide the basic health care services needed to improve health challenges of the rural population. The potentials of the plants are far from being tapped. This study is intended to document such valuable information.

## **MATERIALS AND METHODS**

This ethnobotanical survey was conducted in order to obtain relevant information about medicinal plants used in the treatment of various diseases in Abeokuta township areas in Ogun State. Data collected were based on oral interview with the aid of semi-structured questionnaire and only data from willing respondents were documented. Plant specimens indicated in the recipes were collected, pressed, dried, mounted and identified in accordance with taxonomic practice. The preserved plant specimens were identified and authenticated using their local names and standard texts (Gbile, 1989; Akobundu and Agyakwa, 1998) and Forestry Herbarium Ibadan (FHI).

### **Study areas**

The survey was carried out in Abeokuta in selected locations including: Ijaye, Oke-bode (Isabo), Itoku, Lafenwa and Kuto. Civil servants and traders mainly inhabit these areas, and are therefore densely populated. These formed the bases of selection. Abeokuta lies on Longitude 3° 2' East and Latitude 7° 11' North. It is surrounded by large mass of rocks and has a population of about one million people (Idu et al., 2010). The present day occupants are the Yorubas but the original settlers were the Egbas, known for traditional arts, carving and sculpturing (Idu et al., 2010).

### **Ethical approval**

The purpose of the study was explained to the respondents (traditional herb sellers, traditional medical practitioners and herbalists) and informed consent was obtained from each of the respondents.

### **Administration of questionnaire**

The survey covered a period of six months from July 2011 to

December 2011. Ethno-medicinal information on the plants was obtained by consulting traditional medical practitioners, herb sellers, and herbalists. Semi-structured questionnaire and oral interview were adopted to obtain relevant ethnomedicinal data. The questionnaire was divided into three sections. Section 1 deals with demographic information such as: Age, sex, religion, nationality, practice specification, duration of practice and educational background. Section 2 consists of professional experience on the treatment of diseases and includes questions like: Type of disease treated, frequency of treatment, use of herbal therapy alone or otherwise, duration of treatment, accompanied side effects, accompanied verbal instructions, plant part(s) frequently used, availability of plant/plant part(s) and knowledge of treatment. In Section 3, plants and recipes used in the treatment of common diseases, herbal preparation, arrangement of plant part(s) ingredient, traditional solvent of choice, traditional extraction methods/method of preparation and method of administration were considered. In terms of educational background, majority of the respondents are not literate. The questionnaire was therefore translated and interpreted to them orally in the local language and responses filled into the questionnaire after each interview.

### **Data analysis**

Data obtained from the questionnaires were entered into the computer and analysed using Epi6-info version 6.04 (CDC, Atlanta, GA, USA) (Dean et al., 1994).

## **RESULTS**

### **Demography/personal information on respondents**

A total of fifty respondents made up of herb sellers (50%), traditional medical practitioners (TMPs) (20%), TMPs/herb sellers (20%) and herbalists (10%). The demographic survey of respondents is presented in Table

1. Majority of the respondents were females while the traditional medical practitioners and herbalists were mainly males (Table 1). Table 2 shows the professional experience/expertise of respondents. The survey shows that only 4% of the respondents use other therapies such as incantation, animal parts and divination to aid the cure of their patients (common among TMPs/herbalists).

The survey revealed that a great percentage of the respondents (68%) inherited their knowledge of herbal treatment from their ancestors while 20% got their knowledge from formal training, 10% both from formal training and ancestors while 2% claimed that their trado-medical knowledge was from divination.

The entire survey of the respondents indicated that a total of 58 medicinal plant species from 34 families were in use by the different categories of practitioners. Botanical names, local/vernacular names, English/-common names, family, habit/life form and plant part (s) of plants mentioned are presented in Table 3 while Table

4 shows medicinal plants distribution according to families. Table 5 shows the plant forms and their frequencies while Table 6 shows plant part(s) used and their frequencies. Table 7 shows distribution of the medicinal plants, ailments and recipes.

**Table 1.** Demography of respondents.

<b>Parameter</b>	<b>Specification</b>	<b>N (%)</b>
Practice specification	Herb sellers	25(50)
	Traditional medical practitioners	10(20)
	Traditional medical practitioners /Herb sellers	10(20)
	Herbalists	5 (10)
Sex	Male	15(30)
	Female	35(70)
Age (years)	1-20	0(0)
	21-40	15(30)
	41-60	25(50)
	>60	10(20)
Religion	Christianity	5 (10)
	Islam	28(56)
	Traditional	17(34)
Nationality	Nigerian	50 (100)
	Non-Nigerian	0(0)

N = number of respondents; % = percentage of respondents.

### **Treatments/recipes**

Diseases treated among residents of Abeokuta area include (but not limited to) asthma, cough, yellow fever/jaundice, tuberculosis, chicken pox/measles, malaria, rheumatism, ringworm, hypertension, boil, eczema, cancer, diarrhoea, gonorrhoea/syphilis, skin infections, typhoid, diabetes and haemorrhoid/pile.

### **Herbal preparation**

Herbal remedies can either be prepared from dry plants from markets or freshly collected samples around homes or home gardens. However, respondents affirmed that both forms of plant materials are efficient in herbal preparation except in some cases where freshly collected samples are more preferred.

### **Traditional solvent of choice**

Water, pure honey, aqueous extracts from fermented maize, lime, palm oil and alcohol were the preferred solvents used in herbal preparation. A higher percentage of respondents showed preference for water, followed by pure honey and aqueous extracts from fermented maize. Some claimed that alcohol as solvent is restricted to the preparations of seeds and hard plant parts such as stem bark and root bark.

### **Method of preparation**

The main methods of preparation are decoction (boiling in water or aqueous extract from fermented maize) and infusion. Others are topical (paste and solution), mixture, soup, juice extraction, grinding, steeping (soaking) and strong heating. More preference was shown for decoction than infusion. The time required for boiling is variable and dependent on plant parts or nature of plant. Infusion which is another preferred method is used when recipes consist mainly of leaves particularly when freshly collected. In the case of steeping, plant parts especially stem and root barks are cut into pieces and placed in bottles together with seeds and alcohol was indicated as the common solvent.

### **Method of application**

Respondents interviewed advised drinking a cup-full (about 5 cl) of aqueous preparations 2 to 3 times daily. However, some preparations are required to be taken as much as possible till symptoms of the disease conditions disappear. The use of ashes (made to paste) and washing with aqueous solutions are other methods of administration mentioned.

### **DISCUSSION**

Plants are more easily recognized by their local names in

**Table 2.** Professional experience.

Parameter	Specification	N (%)
Frequency of treatment	Regular	45 (90)
	Irregular	5 (10)
Duration of treatment (days)	1	2 (4)
	2-3	40 (80)
	4-5	3 (6)
	6-12	1 (2)
	Non-respondents	4 (8)
Other treatments apart from herbs	Divination/oracle/ incantation/animal part	2 (4)
	Incision	0 (0)
	None	48 (96)
	Non-respondent	0 (0)
Source of knowledge	Ancestral	34 (68)
	Training	10 (20)
	Ancestral/training	5 (10)
	Divination	1 (2)
Availability of plant/plant parts	Forest	4 (8)
	Around house/home garden	12 (24)
	Market	34 (68)
	Not available	0 (0)
Accompanied side effects	Nausea/ vomiting	3 (6)
	Others	2 (4)
	None	45 (90)
Accompanied verbal instruction	Yes	42 (84)
	No	3 (6)
	Non-respondent	5 (10)

N = number of respondents; % = percentage of respondents.

every part of the world. These local names play a vital role in ethnobotanical study of a specific tribe or region (Singh, 2008). Respondents interviewed gave local names of plants in recipes for treating common ailments. The local names mentioned were authenticated with their respective botanical names using standard texts. Although local names are not recommended directly for scientific accounts of plants as they lack uniformity and consistency (Singh, 2008), yet they may certainly be considered as a useful tool for obtaining useful information on plants. Local names provide means of reference by local people in a particular area. Information gathered showed that increasing number of people are turning to herbal remedies for prevention and cure of various diseases. The 58 medicinal plant species mentioned were represented by all plant forms. Trees were found to be the most used plants followed by herbs,

shrubs, climber, underground stem, creeper and grass. Herbs have usually served as a repository of healing materials and have been acknowledged to be generally safe without or with minimum side effects (Gbile and Adesina, 1986). The plant leaves are important ingredient in traditional treatment of various diseases as it featured as a component in many herbal preparations which were in agreement with Adekunle (2008) and Ayodele (2005).

The result of this survey showed that majority (90%) of the herb sellers/traditional medical practitioners (TMPs)/herbalists claimed no occurrence of side effects following patient's use of herbal preparations. Some of the plants revealed in the survey have been cited in the ethnobotanical survey of some African countries (Ayodele, 2005; Adekunle, 2008; Ogbole and Ajayioba, 2010; Soladoye et al., 2010; Idowu et al., 2010; Oni, 2010). The prominent plant species were *Momordica*

**Table 3.** Some commonly used medicinal plants.

<b>Botanical name</b>	<b>Local/vernacular name (yoruba)</b>	<b>English /common name</b>	<b>Family</b>	<b>Habit/life form</b>	<b>Part (s) used</b>
<i>Abrus precatorius</i>	Oju ologbo	Cat's eye	Papilionaceae	Climber	Leaves
<i>Citrus aurantifolia</i>	Osan wewe	Lime	Rutaceae	Tree	Fruit
<i>Carica papaya</i>	Ibepe	Pawpaw	Caricaceae	Tree	Fruit/seed
<i>Vigna unguiculata</i>	Ewa funfun	White Beans	Papilionaceae	Creeper	Seed
<i>Vernonia amygdalina</i>	Ewuro	Bitter leaf	Asteraceae	Shrub	Root/leaves
<i>Garcinia kola</i>	Orogbo	Bitter kola	Guttiferae	Tree	Root/bark
<i>Alstonia boonei</i>	Ahun	Patternwood	Apocynaceae	Tree	Leaves/bark
<i>Cocos nucifera</i>	Agbon	Coconut	Arecaceae	Tree	Fruit
<i>Allium cepa</i>	Alubosa	Onion	Liliaceae	Undergrd. stem	Bulb
<i>Allium sativum</i>	Ayu	Garlic	Liliaceae	Undergrd. stem	Bulb
<i>Zingiber officinale</i>	Ginija/Atale	Ginger	Zingiberaceae	Undergrd. stem	Rhizome
<i>Cassia fistula</i>	Aridan toro	Indian laburnum	Caesalpiniaceae	Tree	Leaves
<i>Combretum bracteatum</i>	Ogan dudu	Combretum	Combretaceae	Climber	Leaves
<i>Xylopia aethiopica</i>	Eru	Negro pepper	Annonaceae	Tree	Leaves/seed
<i>Mangifera indica</i>	Mangoro	Mango	Anacardiaceae	Tree	Leaves/bark
<i>Bridelia ferruginea</i>	Ira	Bridellia	Euphorbiaceae	Tree	Stem bark
<i>Kigelia Africana</i>	Pandoro	African Kigelia	Bignoniaceae	Tree	Fruit
<i>Calotropis procera</i>	Bomubomu	Milk weed	Asclepiadiaceae	Shrub	Leaves
<i>Ananas comosus</i>	Ope oyinbo	Pineapple	Bromeliaceae	Herb	Fruit
<i>Corchorus olitorius</i>	Ewedu	Vegetable jute	Tiliaceae	Herb	Leaves
<i>Nymphaea lotus</i>	Osibata	Water lily	Nymphaeaceae	Herb	Leaves
<i>Morinda lucida</i>	Oruwo	Brimstone	Rubiaceae	Tree	Stem bark
<i>Saccharum officinarum</i>	Ireke	Sugarcane	Poaceae	Shrub	Crushed stem
<i>Pistia stratiotes</i>	Oju oro	Water lettuce	Araceae	Herb	Leaves
<i>Aframomum melegueta</i>	Atare	Alligator pepper	Zingiberaceae	Herb	Fruit
<i>Rauwolfia vomitoria</i>	Asofeyeje	African Rauwolfia	Apocynaceae	Shrub	Stem bark
<i>Jatropha curcas</i>	Botuje funfun	Physic/pig nut	Euphorbiaceae	Herb	Seed
<i>Khaya grandifolia</i>	Oganwo	Khaya	Meliaceae	Tree	Stem bark
<i>Manihot esculentum</i>	Gbaguda	Cassava	Euphorbiaceae	Herb	Leaves
<i>Cymbopogon citratus</i>	Ewe tea	Lemon Grass	Poaceae	Grass	Leaves
<i>Azadirachta indica</i>	Dongoyaro	Neem tree	Meliaceae	Tree	Leaves/stem
<i>Alternanthera sessalis</i>	Sajeje	Alternanthera	Amarantheceae	Herb	Leaves
<i>Ageratum conyzoides</i>	Imi esu	Goat weed	Asteraceae	Herb	Leaves
<i>Bryophillum pinnatum</i>	Abamoda	Resurrection plant	Crassulaceae	Herb	Leaves
<i>Chromolaena odorata</i>	Akintola taku	Siam weed	Asteraceae	Shrub	Leaves
<i>Citrus paradisiaca</i>	Girepu	Grape	Rutaceae	Tree	Fruit

**Table 3. Contd.**

<i>Citrus sinensis</i>	Osan mimu	Sweet orange	Rutaceae	Tree	Fruit
<i>Ficus exasperata</i>	Ewe epin	Sandpaper plant	Moraceae	Tree	Leaves
<i>Euphorbia hirta</i>	Emi ile/Egele	Asthma weeds	Euphorbiaceae	Herb	Leaves
<i>Terminalia catappa</i>	Igi furutu	Indian almond	Combretaceae	Tree	Leaves
<i>Sida acuta</i>	Esekotu	Broom weeds	Malvaceae	Herb (woody)	Leaves
<i>Parquetina nigrescens</i>	Ogbo	African parquetina	Asclepiaceae	Climber	Leaves
<i>Nauclea latifolia</i>	Egbesi	African peach	Rubiaceae	Tree	Root
<i>Momordica charantia</i>	Ejirin wewe	Bitter gourd	Cucurbitaceae	Creeper	Leaves
<i>Cassia obtusifolia</i>	Ako ire	Cassia	Caesalpiaceae	Tree	Leaves
<i>Newbouldia laevis</i>	Akoko	Fertility plant	Bignoniaceae	Tree	Leaves
<i>Ocimum gratissimum</i>	Efinrin	Scent leaf	Lamiaceae	Shrub	Leaves
<i>Sterculia setigera</i>	Osa aware	Sterculia	Sterculiaceae	Tree	Stem bark
<i>Prosopis africana</i>	Ayan	African prosopis	Mimosaceae	Tree	Stem bark
<i>Piliostigma thonningii</i>	Abafe	Kargo	Caesalpiaceae	Shrub	Root
<i>Sorghum bicolor</i>	Oka baba	Sorghum	Poaceae	Grass	Leaves/seeds
<i>Bambusa vulgaris</i>	Oparun	Bamboo	Poaceae	Shrub	Leaves
<i>Musa paradisiaca</i>	Ogede agbagba	Plantain	Musaceae	Herb	Fruit
<i>Musa sapientum</i>	Ogede paranta	Banana	Musaceae	Herb	Fruit
<i>Talinum triangulare</i>	Gbure	Waterleaf	Portulacaceae	Herb	Leaves
<i>Petivera alliaceae</i>	Awopa	Anamu	Phytolacaceae	Tree	Stem bark
<i>Citrus medica</i>	Osan ijaganyin	Citron	Rutaceae	Tree	Fruit
<i>Arachis hypogea</i>	Epa	Groundnut	Papilionaceae	Herb	Seed

*charantia*, *Vernonia amgdalina*, *Ocimum gratissimum*, *Aframomum melegueta*, *Garcinia kola* and *Citrus* spp. Also, Caesalpiaceae, Euphorbiaceae and Poaceae families were the most frequent families followed by Asteraceae, Papilionaceae and Rutaceae. Scientific studies on these plants would provide insights into their potentials and help us in understanding the pharmacological actions of the active compounds found in these plants (Ramana, 2008). Some of the recipes were obtained from a single plant source, for example, *Talinum triangulare*, *Ficus exasperata*, *Garcinia kola*, *Bryophyllum pinnatum*,

*Musa sapientum*, *Bambusa vulgaris* while others were in combinations with other plants. Decoctions and infusions were the most frequently used methods. Only two of the recipes were prepared using more than one method. Some of the challenges encountered in the course of carrying out this survey include: Respondents not willing to give relevant information due to fear of losing their major source of income, some demanded money prior to interview as they claimed to have "intellectual property" stocked with the knowledge of medicinal plants, while some castigated government for neglecting them

and sending researchers to come and exploit their ethnomedicinal knowledge. Another challenge worthy of note is that some herbalists/TMPs preferred sharing the knowledge on a television programme rather than disseminating ethnobotanical information to scientists. This they claimed will also help to advertise their names and services. This study has provided additional information on the relevance of plants in the treatment of various diseases in our society. It is a step forward towards investigating the medicinal plants diversity in Nigerian flora. The development of an integrated traditional and scientific

**Table 4.** Medicinal plants distribution according to families.

<b>Family</b>	<b>Number of species</b>
Amaranthaceae	1
Anacardiaceae	1
Annonaceae	1
Apocynaceae	2
Araceae	1
Aracaceae	2
Asclepidiaceae	1
Asteraceae	3
Bignoniaceae	2
Bromeliaceae	1
Caesalpiniaceae	4
Caricaceae	1
Combretaceae	2
Crassulaceae	1
Cucurbitaceae	1
Euphorbiaceae	4
Guttiferae	1
Lamiaceae	1
Liliaceae	2
Malvaceae	1
Meliaceae	2
Mimosaceae	1
Moraceae	1
Musaceae	2
Nymphaeaceae	1
Papilionaceae	3
Phytocaceae	1
Poaceae	4
Portulacaceae	1
Rubiaceae	2
Rutaceae	3
Sterculiaceae	1
Tiliaceae	1
Zingiberaceae	2

**Table 5.** Plant life forms and their frequency.

<b>Plant life form</b>	<b>Frequency</b>
Tree	24
Shrub	8
Herb	16
Climber	3
Creeper	2
Underground stem	3
Grass	2

**Table 6.** Frequency of plant parts used.

Plant part	Frequency
Fruits	12
Seeds	4
Leaves	27
Root/bark	4
Stem/bark	8
Bulb	2
Rhizome	1

**Table 7.** Distribution of the medicinal plants, ailments and recipes.

Taxa	Traditional solvent of choice	Method of preparation	Method of administration
<b>Boil</b>			
1. <i>Talinum triangulare</i> , potash	–	Grinding (paste)	Apply paste to boil until it disappears.
2. <i>Xylopia aethiopica</i> , white chalk	–	Topical (paste)	Apply paste to boil
3. <i>Citrus aurantifolia</i>	–	Juice	Wash boil every morning till it disappears.
4. <i>Ficus exasperata</i>	–	Grinding	Leaves ground and applied directly to boil
<b>Asthma</b>			
1. <i>Ananas comosus</i> , <i>Carica papaya</i>	Water	Decoction	Take a cup-full 2 times daily
2. <i>Allium sativum</i> , <i>Garcinia kola</i> , <i>Zingiber officinale</i>	Pure honey	Mixture	Take mixture 2 times daily
3. <i>Corchorus olitorius</i>	Pure honey	Mixture	Take mixture 2 times daily
4. <i>Euphorbia hirta</i>	Water	Decoction	Take decoction 2-3 times daily
<b>Malaria</b>			
1. <i>Azadiractha indica</i> (leaf and bark)	Water	Decoction	Take decoction 2-3 times daily
2. <i>Carica papaya</i>	Water	Decoction	Take decoction 2-3 times daily
3. <i>Momordica charantia</i>	–	Infusion	Leaves squeezed and taken orally
4. <i>Paquetina nigrescens</i>	Water	Decoction	Leaves are boiled and taken orally
5. <i>Vernonia amygdalina</i>	–	Infusion	Extracts taken 2 times daily
<b>Cough</b>			
1. <i>Garcinia kola</i>	–	–	Seeds are eaten.
2. <i>Bryophyllum pinnatum</i>	–	–	Fluid from burnt leaves is taken orally
3. <i>Newbouldia laevis</i>	–	Infusion	Infusion taken orally
<b>Eczema</b>			
1. <i>Musa sapientum</i>	–	Strong heating	Ashes from burnt leaves are used to rub the affected parts.



Table 7. Contd.

2. <i>Altenanthera sessalis</i>	–	Infusion	Extract applied to affected parts.
<b>Cancer</b>			
1. <i>Morinda lucida</i> , <i>Xylopi aethiopica</i> , <i>Citrus aurantifolia</i> , <i>Nymphaea lotus</i> , <i>Saccharum officinarum</i> , <i>Pistia stratiotes</i>	Lime/palm oil	Decoction	Half a cup, morning and night.
2. <i>Calotropis procera</i> , <i>Kigelia Africana</i> , <i>Xylopi aethiopica</i> , <i>Garcinia kola</i>	Aqueous extract from fermented maize	Decoction	Take a cup-full 3 times daily.
3. <i>Citrus aurantifolia</i> (root), <i>Aframomum melegueta</i> , <i>Xylopi aethiopica</i>	–	Grinding	Wash affected parts 2 times daily.
<b>Rheumatism</b>			
1. <i>Cassia fistula</i> , snail meat	Water	Soup	Soup is eaten.
2. <i>Cassia fistula</i> , <i>Allium sativum</i>	Pure honey	Grinding (paste)	Paste is applied to affected part(s).
3. <i>Combretum bracteatum</i> , <i>Garcinia cola</i> .	Water/Alcohol	Decoction/steeping	A cup-full 3 times daily.
<b>Haemorrhoid/pile</b>			
1. <i>Monodora myristica</i> , <i>Allium sativum</i> , <i>Rauwolfia vomitoria</i> , <i>Aframomum melegueta</i>	Water	Decoction	A cup-full 3 times daily till haemorrhoid disappears.
2. <i>Momordica charantia</i> , <i>Ocimum gratissimum</i> , Salt	Water	Decoction	A cup-full 2-3 times daily
3. <i>Musa paradisiaca</i>	Palm oil	Mixture	Mixture applied externally
<b>Tuberculosis</b>			
1. <i>Chromolaena odorata</i>	Water	Decoction	Take a cup-full 3 times daily
2. <i>Abrus precatorius</i> , <i>Cocos nucifera</i> , <i>Alstonia boonei</i> , <i>Garcinia kola</i>	Water	Decoction	Take a cup-full 3 times daily
3. <i>Arachis hypogea</i>	Alcohol	Grinding/solution	Less than a cup-full taken 2-3 times daily
4. <i>Citrus sinensis</i>	-	Juice	Juice taken orally
<b>Measles/chickenpox</b>			
1. <i>Bambusa vulgaris</i> (leaves)	Water	Decoction	Take a cup-full 3 times daily
2. <i>Aframomum melegueta</i> (leaves)	Water	Decoction	A cup-full 3 times daily for 2 week
3. <i>Cajanus cajan</i>	Water	Decoction	Less than a cup 3 times daily
<b>Jaundice/yellow fever</b>			
1. <i>Cymbopogon citratus</i>	–	Infusion	Juice taken orally
2. <i>Nauclea latifolia</i> (root)	Water	Decoction	A cup-full daily
3. <i>Abrus precatorius</i> , <i>Newbouldia laevis</i>	Water	Decoction	Decoction taken orally
4. <i>Mangifera indica</i> , <i>Piliostigma thonningii</i>	Water	Decoction	Decoction taken orally
<b>Hypertension</b>			
1. <i>Newbouldia laevis</i> , <i>Cassytha filiformis</i>	Water	Decoction	A cup-full 2-3 times daily

**Table 7.** Contd.

2. <i>Vernonia amygdalina</i>	–	Infusion	Extract taken 2 times daily.
3. <i>Carica papaya</i> , chalk	Water	Decoction	A cup-full 2-3 times daily.
<b>Typhoid</b>			
1. <i>Zingiber officinale</i> (rhizome)	–	–	Rhizome eaten once daily.
2. <i>Ocimum gratissimum</i> (leaves)	Water	Infusion	Extract taken 2 times daily.
3. <i>Carica papaya</i> (leaves)	–	Infusion	Filtrate taken 2 times daily.
<b>Gonorrhoea/syphilis</b>			
1. <i>Bambusa vulgaris</i>	–	Infusion	Extract taken 2 times daily.
2. <i>Jatropha curcas</i> (seed)	–	–	Seeds are burnt and eaten.
3. <i>Sida acuta</i>	–	Infusion	Extract taken orally.
<b>Diabetes</b>			
1. <i>Momordica charantia</i> , <i>Vernonia amygdalina</i>	Water	Decoction	A cup-full 2-3 times daily.
2. <i>Terminalia catappa</i> (root), <i>Piliostigma thonningii</i> (leaves and seeds)	Water	Decoction	Decoction taking 3 times daily.
<b>Ringworm</b>			
1. <i>Ficus exasperata</i>	–	–	Leaf is used to scratch affected part.
2. <i>Momordica charantia</i>	–	Infusion	Extracts applied to affected part.
<b>Diarrhoea</b>			
1. <i>Chromolaena odorata</i> , <i>Ocimum gratissimum</i>	–	Infusion	Extract taken 2 times daily.
2. <i>Prosopis africana</i>	Water	Decoction	Decoction taken 2 times daily.
<b>Skin infections</b>			
1. <i>Ficus exasperata</i>	–	–	Leaf used to scratch itching or affected parts of the body.
2. <i>Ageratum conyzoides</i>	–	Infusion	Extract applied to affected part.
3. <i>Cassia alata</i>	–	Infusion	Extract applied to affected part.
4. <i>Euphorbia heterophylla</i> (leaves), <i>Sorghum bicolor</i> (grains)	–	Grinding	Powder applied to affected part.

knowledge base will serve as a mechanism for accessing, benefit-sharing and documenting traditional knowledge for sustainable socio-economic development and poverty alleviation in the country.

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