

An Assessment of Spatial Distribution and Utilisation of Some Medicinal Plants in Rural Communities of Osun State, Nigeria

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Abstract. The utilization of herbal products, particularly by rural communities, remains a vital component of an integrated healthcare system, addressing a myriad of prevailing illnesses and diseases. This study investigates the distribution and usage of medicinal plants in selected rural communities of Osun State, Nigeria. Employing a multi-stage sampling technique, three rural local government areas one from each senatorial district of Osun State were chosen for the study. Data were collected qualitatively through interviews with residents and herbal product merchants in the study areas. The analysis employed a content analysis framework and an interdisciplinary approach. The findings revealed the documentation of 43 plant species, categorized by their family, botanical, common, and indigenous names. Key details, including the plant parts utilized, preparation methods, dosage, and the ailments treated, were also recorded. Leaves were the most frequently used plant parts, followed by barks, roots, and fruits. The most commonly treated ailments included malaria, skin diseases, irregular menstrual flow, and typhoid fever. Additionally, plants such as ginger, turmeric, cinnamon, and black pepper were widely used as immune boosters during the COVID-19 pandemic, particularly in rural communities with limited access to vaccines. The study highlighted that limited access to conventional healthcare and the high cost of orthodox medicine have driven rural populations to rely heavily on herbal remedies, especially during the pandemic. However, factors such as deforestation, urbanization, wildfires, and inadequate documentation of medicinal plants threaten their availability and sustained usage. The study recommends the integration of herbal and orthodox medicine into a cohesive healthcare framework, particularly in light of the COVID-19 pandemic, which disproportionately affected urban populations. Emphasis on the conservation of medicinal plants and the establishment of herbal gardens, even among urban dwellers, is suggested to amplify their role in healthcare and ensure sustainable utilization.

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1. Introduction

The increase in the desire for herbal medicine as an alternative to the modern medicine is gaining a lot of ground in Nigeria and even in Southwestern states and among the Yoruba tribe. The increase in the rate of merchants of herbs, national exhibition of herbs by stake holders called (Ipate Isegun meaning Herbal Exhibition) and the rise in the number of naturalist herbal company such as (Yemkem, Oko-Oloyun, Emiola Naturalist Care, Itagiri Herbal Product, Oroki Herbal mixture and Omo-orawe Tradio-medical Herbs) etc has made the use of herbal medicine popular and make its efficiency more acceptable to the people. Home- made medicine, Herbal or Alternate medicine has overtime been a significant part of many rural communities in Asia, Africa, Australia, and many South American countries ((O'connor,2017; Kayne, 2009).

Herbal therapy has been used in Africa for hundreds of years, long before contemporary medicine (Yuan et.al, 2016)

Though herbal medicines were once believed to be primitive and this thought has been challenged by conventional medical practitioners mainly due to lack of measurement and hygiene. But, this has changed over the years due to the innovation in herbal discovery. Plants, in the form of curative medicines, have been part of orthodox wellbeing in most regions of the world for over 2000 years, and there is growing interest in them as sources of healing for many disorders. (Jamshidi-Kia et.al., 2017; Awoyemi, 2012; Ajayi and Akintola, 2010).

Larger percentage of people in developing countries Africa and more importantly in Asia depend on herbalists for their health care(Kakooza-Mwesige,2015). In Nigeria, many people living in rural areas survived by the use of herbal or Alternative medicine which are devoid of operation. The reason is as a result of inaccessibility to constant health care facility, lack of drugs in most health care centers, expensive nature of the modern medicine and some socio-cultural beliefs

(Ofiemor, 2019). The use of herbal medicine is very common in some rural areas of Osun state. Osun state is one of the states in south western Nigeria. The state is notable for its cultural preservation, which is why it is known as the state of the living spring. The state is made up of people from various social and economic backgrounds, ranging from civil servants to businessmen, bankers, and miners, executives to artisans. All these groups of people seek health check up care and other social services in the state. However, due of its price, accessibility, and acceptability, herbal medicine is used by the majority of people, particularly the impoverished in rural areas (Dassah *et al.*, 2018).

The treatment and management of diseases through the use of locally available medicinal plants will continue to play important roles in medical health care implementation, execution and realisation in the world's poorest countries (Sen *et al.*, 2017; Akharaiyi and. Boboye, 2010]. The scope of this survey is to examine the spatial distribution of herbal plants used by the people in some selected rural communities in Osun state and examine how the parts are used in curing some diseases. During the prevalence of Covid 19 Pandemic, many locals could not have access to Covid 19 vaccines and not to talk of the Covid 19 booster. Many even failed to observe the mandatory Covid 19 preventive measures relying on some herbal medicine to boost their immunity in staying strong against Covid 19 attack.

It is important to note that, these herbal plants are not proven scientifically to fight strains of Covid 19 or any form of coronavirus infection, but, they are believed to be potent anti-biotic by the locals. As a result, the integration of herbal medicine or traditional health care system into the mains stream of ministry of health is very essential. Also, the complementary interaction among healthcare practitioners and the delivery of health services, particularly to low-income groups in both rural and urban regions is critical (James, 2018). It is against this backdrop that this study examines the spatial distribution and utilization of some medicinal plants in some selected rural communities of Osun State Nigeria.

2. Methods

Osun state is one of the states in south western Nigeria. The state was created from the former Old Oyo state with its capital in Osogbo. Osogbo is located on Latitude (07° 46' 90"N and (4° 33' 5"E). Osogbo can be regarded as rainforest area with a mixture of Guinea Savannah which favours the availability of various medicinal herbs and especially in rural areas where most of the plants are still in their natural state. The state is relatively populated and home to some companies such as Aluminum, steel and Plastic companies, institution of learning as a result, there is an influx of people looking for a better way of life. Due to its affordability in cost of living and

Table 1. Sampling Techniques

Senatorial Council	Local Government Area Selected	Towns/Villages Selected	Number Of People Selected
Osun Central	Ila Lg	Abalegemo, Alagbede, Gaa Fulani	30 Persons
Osun East	Obokun Lg	Imesi-Ile, Ikinyinwa, Idominasi	30 Persons
Osun West	Aiyedade	Ikija, Ogudu And Aiyesan	30 Persons

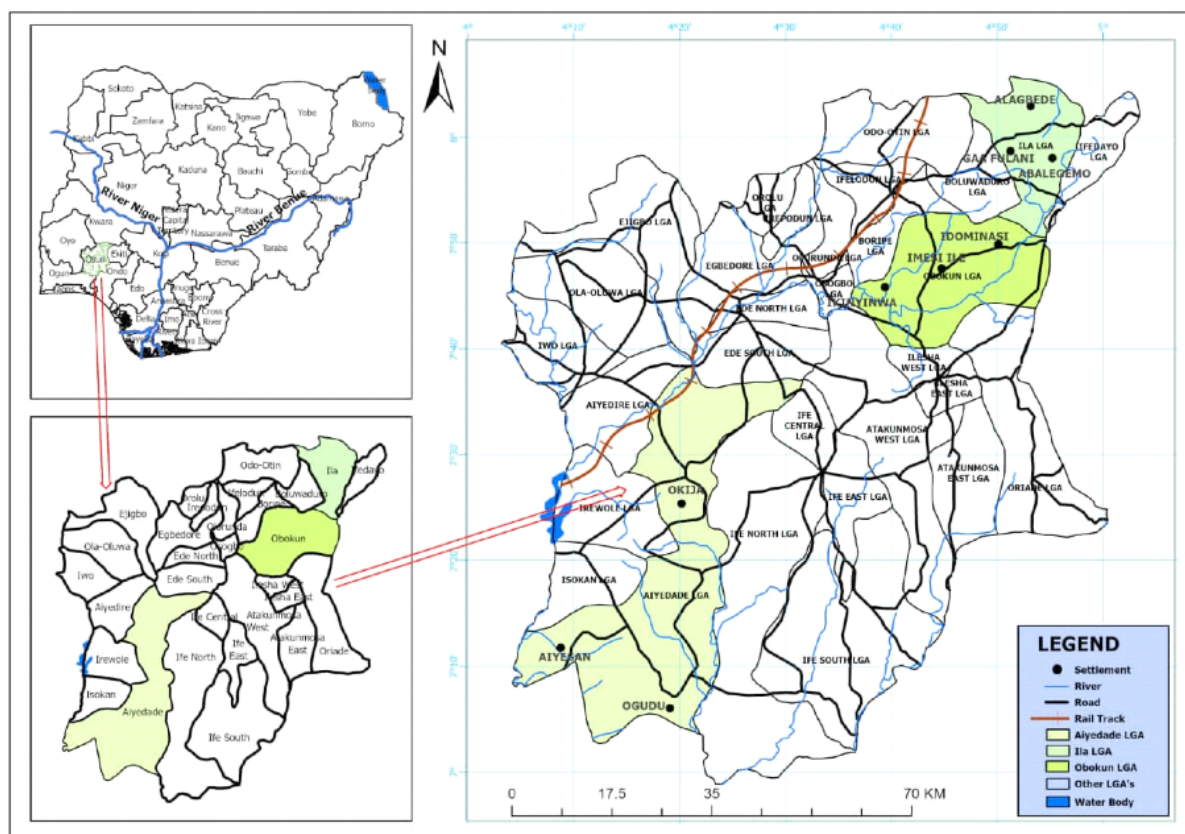


Figure 1. Map of Osun state showing the study areas

constant power supply, Osun state is a now an abode for most civil servant and merchants. This increase in population often stretches public facilities, including hospitals (especially the primary health care centers which are few) leading to alternate sources of health information such as herbal medicine. According a preliminary investigation conducted, it was revealed that most rural areas in Osun state are well informed about the functions and duties of most of the herbal plants. These herbal plants education is taught from one generation to another generation among the rural dwellers. A structured questionnaire (An herbal inventory form) was administered to different herbal medicine dealer, merchants and users in the study areas selected across different local governments. The use of qualitative method of data collection and analysis was adopted for this study. Informed consent objective of the study was explained to the local herbalist and residents in the study area. Approval to conduct the study was given by the

community leaders. Informed consent was obtained from each of the participants during the IDI and FGD interview.

The data in this study were gathered from questionnaires and oral interviews conducted during IDI and FGD by individuals, herbal traders, and merchants. The respondents included both men and women aged 30 years and above, reflecting the age range with good knowledge of herbal medicines. It is however noteworthy to assert that, most of the children from 15years can conveniently identified the herbal plants. But, for the purpose of clarity and validity as well as reliability of data, we decided to use people age range 30 years and above. The indigenous plants collected during the oral interviews were identified with the aid of floras of the area using the rectangular garden based gallery Department of Applied and Environmental Biology, Federal Polytechnic Ede, Osun state and the plants were also authenticated by (Taxonomist), School of forestry Jerricho, and Ibadan.

Table 2. Distribution of Herbs in Some Selected Communities of Osun State.

S/N	Botanical Names	Family	English Name	Yoruba(N)	Location	Plant Parts Used	Medicinal uses
1	<i>Adansoniadigitata</i> L.	Bombacaceae	Baobab	IgiOse (T)	ILA	Leaves, Stem Barks, Roots	Indigestion, skin infections, Vitamin C Deficiency
2	<i>Aframomummelegueta</i> (Sonn.) K. Schum	Zingiberaceae	Alligator pepper	Ataare (S)	ILA	Fruits	Small Pox, Chicken Pox, Cough
3	<i>Allium sativum</i> L.	Liliaceae	Garlic	AlubosaAyu (F)	ILA	Bulbs	Convulsion
4	<i>Alstoniaboonei</i> De Wild	Apocynaceae	Stool wood	Ahun (T)	OBOKUN	Leaves, Barks	Fever, Convulsion, Diarrhoea
5	<i>Anacardiumoccidentale</i> L.	Anacardiaceae	Cashew	Kaju (S)	ILA	Leaves	Fever, Malaria
6	<i>Ananascomosus</i> (L.) Merr.	Bromeliaceae	Pineapple	OpeOyinbo (F)	ILA	Fruits	Malaria, Dysentery
7	<i>Argemone Mexicana</i> L.	Papaveraceae	Mexican poppy	Ekan-Ekun (H)	ILA		Abscesses
8	<i>Azadirachtaindica</i> A. Juss.	Meliaceae	Neem tree	Dongoyaro (H) Igi kasia (Shrubs)	ILA OBOKUN	Leaves, Stem	Dysentery, Fever
9	<i>Boerhaviadiffusa</i> L.	Nyctaginaceae	Hog weed	Olowojeja (H)	AIYEDADE	Leaves	Small pox, Jaundice
10	<i>Cajanuscajan</i> (L.) Millsp.	Mimosaceae	Pigeon Pea	Otili(S)	ILA	Leaves, Seeds	Small pox, Measles
11	<i>Calotropis procera</i> (Aiton) R. Br.	Asclepiadaceae	Giant milk weed	Bomubomu (W)	ILA	Leaves	Cough
12	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Ibepe (S)	ILA	Leaves	Malaria, Jaundice, Convulsion
13	<i>Cassia fistula</i> L.	Fabaceae	Golden shower	Aidan toro (T)	AIYEDADE	Leaves, Stem barks and Roots	Convulsion, mouth sore
14	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime, Swing	Osanwewe(S)	AIYEDADE	Fruits, Leaves	Fever, jaundice, measles
15	<i>Citrus limon</i> (L.) Burm. F.	Rutaceae	Lemon	Osanlaimu (S)	ILA	Fruits, leaves	Stomach ache, convulsion
16	<i>Citrus paradisimacfad.</i>	Rutaceae	Grape fruit	Osangerepu (S)	OBOKUN	Fruits	Malaria
17	<i>Combretum alnifolia</i> Loefl.	Combretaceae	Combretum	Opon (H)	OBOKUN		Eczema
18	<i>Corchorus olitorius</i> L.	Tiliaceae	Jute plant	Eweedu, Ooyo (H)	ALL	Leaves	Diarrhoea, abscess, antihelmintic
19	<i>Abrusprecatorius</i>	Fabaceae	Fern leaf	Omisinmisin (H)	ALL	Leaves	Malaria, Cough
20	<i>Momordica charantia</i> L	Cucurbitaceae	African	Ejimi were	ALL	Stems	Infant Rashes,
21	<i>Rawuwolfvia Vomitora</i>	Apocynaceae	Cucumber	Asofeyeje	ALL	Leaves	Malari
22	<i>Caladium bicolor</i>	Aracaceae	Serpent	Eje Jesu	ALL	Leaves	Ile-Tutu, Fever
23	<i>Syzygium aromaticum</i>	Myrtaceae	wood	Kanafuru	OBOKUN	Fruits/Back of Tree	Ulcer, Tethering
24	<i>Zingiber officinale</i>	Zingiberaceae	Hear t of Jesus clove	Atale	ILA		Vomiting, Pile,
25	<i>Bacopafloribunda</i>	Scrophuliaceae	Ginger	Ewe Oniyemuye	ILA	Underground stem	Blood shortage.
26	<i>Allium sativum</i>	Liliaceae	Memory leaf Garlic	Ayu	Imported	Leaves	Mental Alertness.
27						Bulb	Anti-Biotics

3. Results and Discussion

Table 1.2 shows the individual plant species, their botanical, common, and local (Yoruba names) as well as their families, used, and which part(s) of the plant are used. Our research shows that people use the plants as antiseptics, laxatives, purgatives, anticonvulsants, expectorants, and sedatives in the treatment of malaria, rheumatism, diarrhea, infertility, jaundice, dysentery, gonorrhea, fever, pains, respiratory problems, and poultices, among other things. The table 1.2 also includes specific locations where you can find this plant, whether it's wild or in the surrounding region.

Herbal Preparation, Utilisation and Administration of Some Common Curative Herbs in Rural Communities of Osun State.

This section discussed the herbal preparation and dosage use of some of the herbals concoction in some selected rural communities in Osun state. The results were from the FGD and group discussion with the local residents.

Diabetes, Dysentery, Malaria, Toothache, and Sore Gums.

Anacardium occidentale (Cashew) twig, also known as KAJU in Yoruba, is used as a chewing stick for mouth thrush and smell, tooth ache, and sore gum. The stick contains pepper mint, which inhibits the growth of microorganisms in the mouth. The bark decoction can be used to treat malaria fever by drinking half a glass three times a day. For dysentery, the bark and leaves are cooked and a glass is administered twice a day. According to IDI conducted at Ile Bale Agbodu in Gaa Fulani, one of the respondents maintained thus

"I have known about this business for about 25 years and many people use to come from Ibadan to patronize us. The cashew twig is good for treating decayed gum and teeth especially for adult. If this Cashew twig is mixed with local black soap(Ose Dudu) it is potent for reducing the pain when children are growing teeth. Agbo Kaju o se koju Iba Aponju Pon Ito(Kaju herbal is competent to fight malaria fever and yellow fever".

Herbal Merchant/ IDI/ May, 2023/ 54years/ ILA FG

Another respondent at Aiyesan also opined that

"The acronym Adun ni gbeyin ewuro is true. This bitter leaf with some mustard seed is goods for healing prostate cancer especially when operation is not yet performed. I can count about 34 people within this town who have been healed of prostate cancer by just drinking this bitter leaf mixed with mustard seed. When we finished preparing these herbs we normally say Ise iwosan, ko jumi se, Ise ilera ko ju mi se, Ise Alaafia, ko ju mi se, Oju Alawo ile se, Oju Iba ela se, A ju emi na se oooo".

Herbal practitioner / IDI/ May, 2023/ 45years/ ILA FG

Stomach Ache, Skin Infection, Diabetes and Prostate Cancer.

The sensitive stem of Vernonia amygdalina (Ewuro, Bitter leaf) is used as a chewing stick, and the bitter water is consumed daily as a stomachache treatment. The bitter leaf water is also useful for constipation relief. Moreso, fresh leaves

are mashed in a mortar or used a cleans hand to squeeze the leaf and the juice is extracted. A teaspoon of honey is added to 3 tablespoons of the undiluted juice and consumed as a drink 3 times daily to provide rapid relief from stomach ache. The pure undiluted extract of bitter leaf is applied to the affected portion on a daily basis to treat skin infections such as ringworm, itching, rashes, and eczema. If it is possible, you can use that water to bathe but use local soap called (Ose-Dudu). For diabetes, 10 handfuls of fresh leaves are pressed into 10 liters of water; a glassful is given four times daily for one month to substantially reduce sugar levels while simultaneously repairing the pancreas. Note that, it is important to change the water or process, if you found out the concoction is contaminated. The solution can also be used to calm inflamed joints arthritis and eliminates discomfort. Many of the residents during the FGD discussion gave testimonies of potency nature of bitter leaf concoction and most especially when honey is being added to eat for skin infection. According to an FGD discussion, one of the respondent who is usually called Oloola (the one who circumcised) She maintained thus:

"This work of Oloola made me to know that, conventional medicine is limited when it comes to certain diseases. Most of the children infections are resistant to the modern drugs. Any time we prepare bitter leaf concoction and mix with soap for children, we do pray over it, so that it can work very well according to the dictate of our fore fathers. So anything like Eela (rashes) Lapalapa(Encema) Ifo and other skin diseases usually disappear. Gbogo Igi ti elegbeje ba ti fi owo ba didun ni dun(Anything we do in traditional medicine works by the power of our forefathers)".

Oloola/ May 2023/ FGD/ 46years/ ILA LG

Another respondent also explained that:

"The acronym Adun ni gbeyin ewuro is true. This bitter leaf with some mustard seed is goods for healing prostate cancer especially when operation is not yet performed. I can count about 34 people within this town who have been healed of prostate cancer by just drinking this bitter leaf mixed with mustard seed. When we finished preparing these herbs we normally say Ise iwosan, ko jumi se, Ise ilera ko ju mi se, Ise Alaafia, ko ju mi se, Oju Alawo ile se, Oju Iba ela se, A ju emi na se oooo".

Herbal practitioner / IDI/ May, 2023/ 45years/ ILA LG

Anaemia, Intestinal Ulcer, and Heart difficulty.

Musa paradisiacal (Banana Fruits Ogede Agbagba) dried peels are pulverised into powder. For intestinal ulcers, one tablespoon of the powder is mixed with four tablespoons of honey and licked three times a day for two weeks. A portion of the root and fresh leaves are boiled separately, and 1/2 and a full glass are consumed daily for one week to treat intestinal ulcers and anaemia, respectively. Diabetes can be treated by eating unripe fruit that has been roasted, boiled, mashed, or processed into flour. Reports from the use of this ogede Agbagba is very massive. According to some of the respondent identified, they maintained thus;

"Ogede Agbagba le ken ka. Though, it is not easy to get this Ogede in our locality here but, we normally import from Ikire, Oyo and sometimes Ogoja. The demand for this plant is very high. We usually grind this banana into flour and prepare it as swallow instead of eating fufu, eba, lafun which contains high level of starch and sugar. I am personally using this ogede Agbagba to replaced my regular meal and it has reduced drastically the sugar level in my body".

Herbal user / IDI/ May, 2023/ 50years/ AIYEDA LG

Another respondent, who is also an her user in the area maintained that;

"I was formerly at Iyin Ekiti before I relocated to Ogudu town. I usually suffer from ulcer according to what the medical doctors said. I have been using series of local drugs until I migrated to this village for my farming. It was my friend Lasisi that introduced me to this Ogede Agbagba fruit juice and it has been working for me. Though I normally add little milk to reduce the burning sensation. The Banana fruits are working very well for ulcer of any stages or types".

Herbal user / IDI/ May, 2023/ 49years/ Ogudu village

Skin Infection, Malaria Fever, Anaemia, Diabetes, and Bronchitis.

Fresh *Mangifera indica* (Mango, Mangoro) leaves and bark are cooked with papaya and neem leaves. To cure fever, anaemia, and diabetes, a glassful of the mixture is taken three times daily. It is also used to cure malarial fever by washing early in the morning. It is best to prepare these herbs fresh each day. It is more effective and sanitary. In all the study areas, one of the potent medicine everybody used in the study areas to kill malaria is the use of Mango leaves. In all the Local government visited, mango leaves are very important for curing malaria. This Mango leaves are also boiled during cold weather to treat flu. According Baba Alata in Abalagemo, he maintained thus:

"Kosi Ile kan ti e wo, ti e nib a ape oru. That is, there is no household you will enter, you won't see herbal pot. It is like our first aid box found in the city. Especially during the raining season, every child must take these herbs. It will keep you active during the day and also allows you to urinate out malaria. You can prepare as many time as possible, because this the leaf of either mango or its bark are available at every location."

Herbal User / IDI/ May, 2023/ 65years/ ILA LG

The above results tally with the findings of Nwauzoma et al (2013 and Awoyemi, 2012) that the utilization of this herbs is a function of its availability in the rural areas where most of the plants are yet to be disturbed by urbanization, deforestation, horticultural cultivation, road constriction and so on.

Typhoid Fever and Lactation Deficiency

The bark, root, and leaves of *Morinda lucida* (Brimstone tree, Oruwo) are used in an infusion or decoction to cure

yellow fever and other forms of fever for 3 days, taking 1/2 glass twice daily and washing. The bitter leaf decoction is given to women's breasts during weaning to improve milk. Twigs serve as chewing sticks. According to popular herbal sellers in this area, usually called Alfa Alagbo, he maintained that:

"I specialized on women sickness such as fibroid, poor menstrual cycle, bareness and any disease that relate to women issues. The area I also like is the problem of lactation deficiency. The people at our health clinic along the market area use to direct people to me as regard that lactation problem. We usually feed them or asked them to prepare some vegetables such as oruwo, amunututu, ewe ilasa and morogbo. This vegetable contains high level of tonic and metabolic substances called Ofini ewe that enhance the production of milk for breastfeeding mothers".

Alfa Alagbo/ IDI/ April, 2023/ 48years/ ILA LG

Another woman who is also Alagbo in that community also attested to this leaves. According to her:

"Despite the fact that am not an educated person, our health center usually invite me, to come and talk to the new nursing mothers on how to prepare some of this leaves soup. Oti wa di Aseje, Arunje, pelu Amuje fun itoju awon obrin alabiamo. That is, it is compulsory for women to eat and drink some of these things for their health."

Herbal practitioner / IDI/ April, 2023/ 45years/ ILA LG

Malaria Sickness, Diabetes, Stomach Ulcer, and Convulsion.

Papaya leaves usually called **Ewe Ibepe** are squeezed into 2 litre of water and a glassful is taken three times daily for seven days to cure malaria fever and jaundice. The consumption of this herb must be taken hot and not when it is cold. Similarly, the green leaves are pressed into 1 liter of water and eaten three times per day to treat diabetes and constipation before the patient will eat anything in the morning. Unripe Papaya fruit is chopped into pieces, the peel and seeds are removed, and the fruit is steeped in five litre of water for four days to treat intestinal ulcers. It is sieved, and 1/2 glass is consumed three times every day for two weeks. However, it is essential to note that, patient must continue to eat as at when due. This is the only way to fight ulcer and heal up the damaged cells. Unripe Papaya sap includes a high amount of papain, which is used to treat chronic wounds or ulcers. The powdered dried papaya leaves are cleansed and pulverised. To treat high fever and convulsions, mix two tablespoons of crushed powder into 1/2 glass of palm kernel oil, stir well, and spread all over the body. Due to the nature of their exposure in the study area, convulsion is seen by both spiritual attack and weather. According to one of the Herbal priest in the area, he maintained that:

"There are two types of convulsion. Giri Alafise, Giri Ile tutu, Giri eleje. (Convulsion that is spiritual, the one that is weather influenced like cold and the one that comes due to shortage of blood. No matter the one that is affecting a particular patient, we usually consult Ifa. But, if it just based on weather and shortage of blood, we can use dried leaf pawpaw and that of orange with a little ugu leaf. If

any patient takes this for 7-10days, such parent would be healed”.

Herbal practitioner / IDI/ April, 2023/ 52years/ OBOKUN LG

Cough, Flu, Malaria Fever and Repellant Incense

To treat cough, a decoction of *Cymbopogon citrate* (Lemon grass, Ewe Tea) leaves with onion and honey is taken three times daily for three days. The leaf is cooked with other herbs and bathed in for two days to treat malaria fever. The leaf is burned in homes to function as a mosquito repellant. In all the houses visited, we saw lemon grass in most of the compounds. They usually plant this to cure malaria. The tea is a very good for detoxification. At night the leaves are burnt as incense to drive away the mosquitoes. Similar studies by Ahuja 2019 and Danladi 2016) asserted that, lemon grasses are potent herbal medicine for Malaria fever in western region of Nigeria.

Abdominal Pains, Ulcers, Skin Disease, Dressing of Wound.

An abdominal discomfort cure is a decoction of the whole plant of *Ageratum conyzoides* (Goat weed, Imi Esu). Leaf juice is applied to wounds, ulcers, and other skin ailments. Because it prevents early miscarriage, the leaves are utilized as a fertility tonic. During body cut, the Goat weed can be used as spirit pending the time the patient would be taken to the hospitals. Note that, this herbal medicine can't prevent Anti- Tetanus.

Fibroids, Cataract, Gonorrhea, Aphrodisiac, Cough, Inflammatory Symptoms, Toothache, and Sore Throat.

Spondias mombin (Hog plum, Iyeye) seed is boiled with immature palm nuts and 1/2 glass is given thrice a day for two months to treat fibroid. Fresh leaves are crushed, and the juice is strained, mixed with one teaspoon of lime juice, and given twice daily as an eye drop for cataracts. For gonorrhea, fresh leaves are boiled and one glassful is consumed three times a day. While at Imesi Ile, we met one of the respondents who shared his stories with us and how he was cured of STDs. According to him:

“I don't know how I contracted Gonorrhea, but, this must have been through one of my girl friends when I travelled to Benin for a carpentry Job in a construction company. I have been noticing some whitish things in my penis and sometimes find it difficult to urinate. I have been to different chemist and they gave me Anti-Biotics but nothing happened. One of my friends now introduced me to Baba Ero. They usually called him Ero because he has solution to everything. I don't know other products the man gave me, but Iyeye is one of them. I drank the juice; I ate the leaf as soup and as drinks with other concoction that are completely herbal. The treatment took me about 12days”.

Herbal user / IDI/ April, 2023/ 39years/ OBOKUN LG

As a food. *Telfairia occidentalis* (Fluted Pumpkin, Efo Ide) leaves have a great nutritional value as a vegetable for soup and other traditional recipes. The leaves are cleaned, and the juice extracted is combined with milk and consumed as a blood tonic. Boiling the seeds makes them a delicacy and a source of oil. Some of the plants are utilized as herbs, for

food, and for other purposes. In all the places visited, blood tonic foods are embedded in their meal especially through vegetables. Thus whether most of the communities added milk or not for their uses, the soup is in order for blood tonic.

Ringworm, Scabies, Eczema, Sexually Transmitted Diseases, Thrush Bleeding, Wounds, Toothache, and Skin Disease.

Jatropha curcas latex (Lalapapafunfun, Purging Nut) is used to cure skin conditions such as ring worm, scabies, and eczema. Twigs are chewing sticks that are used to reduce tooth decay, oral thrush, bleeding, sores, and toothache. Sexually transmitted illnesses are treated using roots. Cassava fermentation is accelerated by the addition of leaves.

Improvement of low Sperm Count, Fertility, and Menstrual Flow.

Tetracarpidium conophorum (Wall nut, Asala) seed is used to treat fibroid. Boiled seeds are consumed by men to increase sperm count. Leaf juice is used to promote female fertility and regulate menstrual flow. The use of Asala has been a very potent seeds to improve fertility. This assertion supported the findings of (Alasiri 2017) based on the identification of natural fruits and seeds that enhances sexual performance in men without using energy sex booster drugs.

Threatened Abortion, Convulsion, Epilepsy, Skin Infections, Cs, Migraine, and Earache.

A medium-sized pot is filled with fresh bark of *Newbouldialaavis* (Ewe Akoko, Boundary leaf) and boiling water for an extended period of time. The mixture is then used to wash the face and head every morning and night; oral administration of 1/2 glass of preparation twice daily for 6 days treats migraine and prevents vaginal bleeding in threatening abortions. The leaves and roots are boiled together and used to treat fever, convulsions, and epilepsy. Skin infections are treated with stem bark. In conjunctivitis, a decoction of the leaves is used as an eye wash. The extract of boiled leaves is used to treat general malaria. According to a traditional birth attendants in the area. She said thus;

“Naturally, Ewe Akoko is a very useful leaf in Yoruba land due to its cultural value. But this leaf is beyond mere chieftaincy ceremony. It is very potent for epilepsy (Warapa lasan) that is the one that is not spiritual. The leaf is also useful for curing conjunctivitis. Awon Alaboyun to ma ri eje ni gbogbo Igba, gbodo malo ewe Akoko ninu ounje won (Those pregnant women, who sees blood in their regularly needs to use boundary leaf. This is because, Ewe Igba ki ye ewe akoko lati joye(once a man want to be installed as a king, ewe akoko must be present.) Hence, we used this incantation or sobriquet for pregnant women, who are experiencing abortion or threatened abortion”

Female Birth Attendants / IDI/ April, 2023/ 52years/ OBOKUN LG

Herbal Plants in Treatment of Covid 19 (Coronavirus)

Some plants were also identified by the respondent as a very good preventive and curative measure during COVID19 period by the locals. These plants were examined and their functions were documented.

Mushroom (Olu) and Tumeric (Ata-Ile-Pupa)

These two plants were used by the locals during the compulsory quarantine to boost their immune system against Covid 19 virus. These two plants contain antioxidants and bioactive substance that can provide protein and also support perfect flow of blood in the body. According to a respondent whom we met at Araba Farm in Obokun LG, he maintained thus:

“Though government said we should not go out but if we did not go out can we survive? Kosi enikan kan ti koro pa ni oko wa nitoripe olu ati ata ile pupa dara lati ba awon aisan ti o gaju ja, papa laye awon baba wa. (The mushroom and turmeric are good to fight strange diseases even from the time of our forefathers. We normally use it to cook egusi soup or sometimes boil it and drink the water. We add the Tumeric to our beans and rice and sometimes we eat it raw. My wife most of the times prepare it with moin moin and throughout the period of coronavirus, we never heard that at IMESI-ILE anyone died of coronavirus.”

Farmer / IDI/ April, 2023/ 55years/ OBOKUN LG

Another respondent also added that:

“Ata ni oko coronavirus (Pepper is the killer of Coronavirus). This Tumeric is our everyday food. It was when many people were coming from the city to demand for Tumeric and Mushroom to cure Coronavirus, we knew that our balanced diet is better off in the village even though we could not have access to the Covid 19 vaccines being distributed all around.”

Female head of the house / IDI/ April, 2023/ 50years/ OBOKUN LG

Astragalus root (Orogbolo) Angelica root(Otito)

Although this plant according to the locals is very scarce because our climatic conditions in Nigeria does not support the spread of this plants. But in an interview with the head of herbal sellers in ILA LG, she maintained that:

“The orogbolo leaves and roots are very good. They serve as cure for malaria and any symptoms of coronavirus based on what we were told by the doctors in our community. If we are all waiting for Covid 19 injections the government promised us, we would have been dead by now. This is the result of the knowledge we gained from our forefather. We already have a small farm, where most of us plant these leaves, so that we won't suffer for it, in the future. We have two types of Otito leaves (White and Brown). The white one can be used as condiments during cooking but the brown one is cooked in a pot for 1 hour with plenty water. This is what we drink everyday as drugs during coronavirus”.

Female Herbal Seller / IDI/ March, 2023/ 50years/ ILA LG

Ginger, Black Pepper (Iyere), Cinamon, Lime, Garlic(Ayu) and Orange peels.

These herbs are very good for immune boosting capacity during Coronavirus season. Even in the city, many of usually eat, chew or drink these herbal products. These plants contain

immunomodulatory activity which produces vitamins, Nitrites, alkaloids that can fights anti-bodies. According to popular herbalist who specializes in sale of herbs in Ikija(Aiyedade local government) he asserted that:

“Everything God created is for our use. Infact Eledumare(God) knew that Coronavirus would come to the world one day and that many who have shattered and called we herbalist witchcraft would come back to us. I never suffered any sickness during Coronavirus. It was even kabiyesi Oba Ikija that made it compulsory that everyone must be eating Ginger, Orogbo, Garlic etc. The association of herbal sellers told the king that, if they don't want people to die, these plant are good for use to prevent Covid 19 attacks which has killed millions of people. Even the small children in this town know the importance of Ayu, Iyere and Orange peels”.

He added further that;

“The use of orange peels is now seen as our tea. We don't throw away the orange peels. We dried it and then grind. This can be taken as tea every morning. The same thing is applicable to cinnamon leaves or seeds. We add black peeper to our pap as well as ginger. It is only pregnant women that we don't compulsory it for.”

Herbal Seller / IDI/ April, 2023/ 65years/ AIYEDADE LG

Discussion and Implication of Research Finding.

Our findings show that the 35-plant species identified were useful as soup, food, and meat, as well as the treatment of various human ailments, demonstrating that traditional medical practice is an important component of our daily lives and thus an alternative to the use of medical drugs, which findings are similar to (Panossian et.al., 2021; Yuan et.al., 2016; Ayeloja and Bello, 2006). This suggested that traditional medicine should be institutionalized alongside orthodox medicine in order to develop a successful national health care system in Nigeria. The researchers maintained that orthodox medicine alone cannot attain effective health in Africa unless it is supplemented with traditional medicine (Mothibe and Sibanda, 2019; Sen and Chakraborty 2017; and Gyasi et.al. 2011)

Also, from the research and interview the findings shows that because of their poor economic circumstances, most people in rural areas rely on traditional medicine for their health requirements. This is one of the main reasons why traditional medicine has thrived in both rural and urban areas. This is one of the major reasons why traditional medicine has continued to thrive in both rural. With the inflation pattern in Nigeria based on the high cost of things. The use of medicinal plants in traditional medicine has been shown to be successful, inexpensive, and practical (Qadir and Raja, 2021; Jamshidi-Kia, 2017; Ekujoba and Odeleye, 2005; Alias 2014) noted the growing interest on the medicinal properties of a number of common plants. The practice is fast developing due to poor economic situation, expensiveness, and inadequate availability of drugs. Studies by Nwauzoma et.al, (2013) also reveals that there are inter-ethnic relationship in most of the plant found in south and western part of the country and they are useful for curing all form of diseases not just in rural areas but also among the urban dwellers.

Gender and age influenced our respondents' traditional knowledge. Males between the ages of 45 and 70 have more medical expertise than females. This finding supported Oyelakin, (2009), Grigo, (2022) and Tsobou et.al (2016) reported that among the Yoruba ethnic group of Nigeria, traditional medicine practice is dominated by males due to secrecy in transmitting the knowledge from generation to generation. This is consistent with a claim that males are culturally viewed as the heirs of family heritage for preservation and continuity, with the assumption that females leave the family after marriage (Coontz, 2016 and Elufioye et al., 2012). This could be owing to their involvement in commerce or long-term intimate interaction with these plants. Furthermore, there appears to be a loss of trust in the traditional medicine system among the younger generation, which may be related to the rising use of allopathic medications, which are widely available and potent. Our data also show that indigenous people view several of these herbs as more medicinal than culinary. Garlic, for example, is more effective than seasoning food in treating fever, cough, constipation, asthma, neurological disease, hypertension, ulcer, and anthelmintic. The same is true for onions, curry leaves, ginger, and fragrance leaves. Also the use of Cinamon contains rhizome which is important to cure throat infection, dry cough and Influenza common symptom found in coronavirus patient (Kenta Diaz, 2022; Augustine et al, 2023). These plants have also been found to purify blood and cure gastrointestinal infection based on the respondent's observations. The conservation of indigenous plant species of medicinal relevance is vital to ensure that they continue to be a source of health and income. There is a need for greater collaboration among herbal medical practitioners, medical doctors, and other stakeholders in medical practice to bring traditional healers closer together by involving them in laboratory work, training, and obtaining information on traditional prescriptions for specific diseases. Traditional and conventional medications should be complementary, and their integration or harmonization is required for quality healthcare delivery, particularly in rural populations. In conclusion, the use of herbal medicine should not be essentially seen as means to an end but end to a means. Most of the locals used these herbs as part of their daily foods and hence it helps them to stay healthy. Such a practices should be introduced in the city where individual can have herbs garden for easy access to some of these plants that are essential for healthy living.

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