



Ethnobotanical investigation of medicinal plants commonly used by the indigenous people of Omu Aran, Kwara state, Nigeria.

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Abstract

This study aimed at documenting the medicinal plants use in the treatment of various ailments by the indigenous people of Omu aran, Kwara state, Nigeria. Plant drugs that are used in combating health concerns such as malaria, wound or blood stoppage, boils, tooth ache, skin infections, dysentery, constipation, menstrual disorder, gonorrhoea, high body temperature, stimulant, convulsion, diabetes, tonic, typhoid fever, cough, cholera, whitlow, worms, yellow fever and constipation have therefore been documented in this study. The major plant families which contributed in folk herbs included Asteraceae and caesalpinaceae. For each species, botanical name, vernacular name, part(s) used, medicinal use, method of preparation and applications of the herbal remedies are provided.

Keywords: Ailments, Asteraceae, Ethnomedicine, Ethnobotany, Folk medicines

Introduction

Ethnobotany is the scientific study of the relationships that exists between people and plants. It was not known where or when plants first began to be used in the treatment of disease, but the connection between plants and health has existed for thousands of years (Faleyimu and Oluwalana, 2008). Since the beginning of civilization, people have used plants as medicine, perhaps since Stone Age. Plants are believed to have healing powers on man (Venkataswamy *et al.*, 2010). The use of traditional medicines for various ailments dated back to over 2000 years and is a source of remedies for rural communities throughout the world (Ernst, 2005). However, it is estimated that about 80% of the rural communities utilize traditional medicines for their day to day needs (Ernst, 2005). Ameh *et*

al. (2010) defined Herbal or botanical medicine, or phytotherapy the use of plant materials to prevent and treat ill health or promote wellness. The use of herbs as medicine is the oldest form of healthcare known to humanity and has been used in all cultures throughout history (Barnes *et al.*, 2007).

All over the world, various researches on the significance of medicinal plants in the treatment of ailments have been documented (Cox, 2005; Kumar *et al.*, 2005), but little have been done in Nigeria (Gill, 1992; Sofowora, 1993). Therefore, the need for proper documentation of traditional medicinal practices among the indigenous people of Omu Aran, Kwara State in Nigeria where there has been a dearth of published information is

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necessary and this accounts for the rationale to undertake the present study.

This study was aimed at documenting the ethnomedicinal potentials of common herbs used by the indigenous people of Omu Aran, Kwara State Nigeria.

Materials and Methods

Study area

Omu Aran town is situated some 88 kilometres South of Ilorin, capital of Kwara State and 16km North-East of Otun Ekiti, in Ekiti State. It is located on 8.9°N and 50.61°E. The town shares boundaries with Iloffa and Odo-Owa in the East, Ipetu- Igbomina and Arandun in the South, Oke-Onigbin in the West, Oko and Isanlu-Isin in the North and North-West respectively. Omu-Aran, as in most parts of Igbomina Land, is on the highland beautifully nestled in a girdle of hills. It is located on a section of Elliu Hill and is actually the highest point above sea level in Kwara State. Omu-Aran is the most thickly populated of all Igbomina towns, with a population of about 55,000 (2001 estimate).

Farming is the main stay of the town's economy and it is still in practice till present the subsistence level. It is done on full time basis mostly by the aged and on part time basis by public servants and enterprising professionals and artisans. The climate is tropical maritime with a long wet season. The weather is moderate, subject to modest variations of hot and cool as the season changes. Rain is typically heavy and the season lasts for about eight months in a year. It lies within the zone that enjoys the highest rainfall in Kwara State.

The town is blessed with a large expanse of rich soil and greenery typical of the guinea savanna. From it grow such food crops as yam, maize, guinea corn, cocoyam, cassava, rice, locust bean, Shea Butter, etc and such cash crops as cocoa, kola nut and oil palm.

Methodology

The survey was conducted in local language (Yoruba) via oral interview using the modified method of Sofowora (1993). Two methods were employed; structured and semi-structured

form of interview. Sixty informant were interviewed and they were selected based on prior informed consent sought. The informants were 60% female and 40% male. The research recorded information on various remedies with reference to local names of the plants, plant parts, methods of preparation, administration and dosage.

Results and Discussion

The survey generated over 40 plant species with varying habits which included; herbs, shrubs, trees and Lianes. These are widely distributed within 27 plant families. The richest being Asteraceae and Caesalpiniaceae that have three species each. Others with two species included; Lamiaceae, Moraceae, Piperaceae, Rutaceae, Euphorbiaceae, Anacardiaceae and Cucurbitaceae while the rest were represented by a specie each (Table 1). Leaves constituted the major part of the plant used followed by fruits, root, stem, seeds, rhizome, fruit juice and latex. The documented medicinal plants and their ethnomedicinal uses along with common name have been summarized in Table 1.

In treating ailments such as fever, wound, malaria, convulsion, diabetes and many other diseases. The study showed that the people relied on plants that are powdered, boiled, soaked in alcohol or grinded with the traditional black soap. They also take these drugs topically (application on affected parts), taking it with pap, making pastry of the plant materials and taking them as soup especially those that are used as vegetables. It is important to state that some plant species are believed to work efficiently in combination with other species or materials such as honey, salt, sugar etc. Some of these were recorded in our study with seven of the malaria drugs combined with one or more species or materials, three species described for fever while two species each used in the effective management of diseases such as gonorrhoea, diabetes, typhoid, most of which are either administered orally or topically.

In practice, many of these plant species have proven to be most useful in treating more than one ailment. Those recorded in this survey included; *Carica papaya* whose leaves are

used in the treatment of malaria while the latex takes care of whitlow, *Citrus aurantifolia*'s fruit juice and fruits are employed in treating fever, boils, cough and piles respectively. *Elaeis guinensis* oil is used as cough remedies and seeds are employed in high body temperature, *Vernonia amygdalina* has its leaves used for malaria and diabetes patients. *Azadiracta indica* leaves are used as anti-malaria and stem as anti-diabetic. Similarly, leaves of *Chromolaena odorata* are used by the people in the stoppage of bleeding, wounds and managing malaria. *Jatropha gossypifolia* leaf extract is administered to families and neighbours suffering from dysentery and menstrual disorder, *Nicotiana tabacum* leaves are stimulant and convulsant and also prevent tooth decay when chewed.

The results of the investigation showed that the people of Omu aran like other 'locals' are quite aware of the medicinal significance of the plants within and around them. They have also relied on these green creatures in solving health concerns in this region of the world. Some of the plants listed here have been accorded same use by other people. For example, *Vernonia amygdalina* is used in South Africa (Steenkamp, 2003) and Rwanda (Biggelaar and Gold, 1996; Boily and Puyyelde, 1986; Cos *et al.*, 2002) for malaria and diabetes. In Tanzania, *Azadiracta indica* is employed as repellent in combating Anopheles mosquitoes causing malaria (Kweka *et al.*, 2008).

Various researches carried out on *Telfairia occidentalis* supported its use as blood tonic (Dina *et al.*, 2000; Gbile, 2002). In addition, the flowers are used as cosmetic in Iran to improve complexion and medicinally for chest pain (Fasina *et al.*, 2002). The oily seeds are also believed to have lactating properties and as such are in demand by woman with young babies. (Schippers, 2000). Moreover, the plant has also been reported for its antioxidative and free radical scavenging properties (Nwanna and Oboh, 2007; Adaramoye *et al.*, 2007; Iweala and Obidoa, 2009; Kayode *et al.*, 2009; Kayode *et al.*, 2010). Combination of milk and *T. occidentalis* as described in this investigation correlated with other regions that claimed its efficacy in more critical or serious

anaemia condition (Beckley, 2012). Both *Jatropha gossypifolia* and *J. curcas* are recognized in India and Tropical America as having purgative activities (Joy *et al.*, 2001).

Conclusion and Recommendation

The use of medicinal plants in the management of diseases is not fresh to the people of this area as they rely majorly on them. This could be unconnected to their relative availability, little or no cost, efficiency and inherent trust in the practice. Also, the high cost of orthodox drugs might have contributed to the development. It is however not negotiable that the area is rich in ethnomedicinal knowledge and majority of people rely on plant based remedies for common health challenges. It is recommended that further studies on the screening, Isolation and characterization of bio-active components should be carried out.

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Table 1: Profile of plants used in the treatment of various ailments by the indigenous people of Omu Aran in Kwara State

Disease	Medicinal Plant	Family	Common Names	Local names (Yoruba)	Plant part	Method of preparation and mode of application
Fever	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime	Osan wewe, orombo wewe	Juice of the fruit	The juice is mixed with the juice of lime and the mixture is taken with pap.
	<i>Gossypium hirsutum</i> L.	Malvaceae	Cotton plant	Owu akese	Leaves	The leaves are squeezed with lime and local gin, left for about an hour and the decoction taken orally, but in small quantity.
	<i>Bixa orellena</i> L.	Bixaceae	Bixa	Aje	Leaves	The leaves are boiled in water and the extract is taken orally.
	<i>Cymbopogon citratus</i> (DC.) Strapt.	Poaceae	Lemon grass	Ewe tea	Leaves and rhizomes	The leaves and rhizomes are boiled together in water as tea and the decoction taken orally and when hot, used as steam bath.
Wound and Blood stoppage;	<i>Ageratum conyzoides</i> L.	Asteraceae	Goat weed	Imi esu	Leaves	The leaves are crushed and used to cover the wound.
	<i>Chromolaene odorata</i> (L.) R. King & H. Robinson	Asteraceae	Siam weed	Ewe Akintola	Leaves	The leaves are crushed and directly applied to the cut surface.
	<i>Ocimum basilicum</i> L.	Lamiaceae	Basil plant	Efinrin-aja	Leaves	The leaves are squeezed and the squeezed leaves put in the nostril for some time.
Boils/Swollen parts	<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	Amaranthaceae	Khaki weed	Dagunro	Leaves	The leaves are ground, mixed with Shear butter fat and the mixture is used as ointment to rub the boil.
	<i>Bixa orellena</i> L.	Bixaceae	Bixa	Aje	Leaves	The leaves are ground, mixed with the fat or shear butter and use as ointment to rub the affected part.
	<i>Ficus thoningii</i> Blume	Moraceae	Ficus	Igi odan	Leaves	The leaves are collected and flamed briefly to make it warm. Warm leaves are then used to massage the swollen part.
	<i>Peperomia pellucida</i> (L.) Kunth	Piperaceae		Rinrin	Leaves	The leaves are crushed in shear butter and is applied to the boil as ointment to make the boil soft and to bust quickly and easily.
	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime	Osan orombo	Juice of the fruit	The juice mixed with palm oil and sugar. It is licked as often as necessary.
<i>Jatropha curcas</i> L.	Euphorbiaceae	Physic nut	Ewe lapalapa funfun	Leaves	As a poultice	

	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Physic nut	Ewe pupa lapalapa	Leaves		As a poultice
Malaria;	<i>Anacardium occidentale</i> L.	Anacardiaceae	Cashew	Kaju	Leaves		The leaves are boiled in a pot with water, and the extract is taken orally or use to bathe.
	<i>Physalis angulate</i> L.	Solanaceae	Cutleaf groundcherry	Koropo	Leaves		The leaves are boiled in water and the infusion is taken orally and used as steam bathe.
	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem tree	Dongoyaro	Leaves		A pot full of the leaves boiled in water and the decoction taken orally, hot or cold or used as steam bathe
	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Ibepe	Leaves		The leaves of Neem and the leaves of pawpaw boiled together in water and the decoction taken orally.
	<i>Chromolaena odorata</i> (L.) R. King & H. Robinson	Asteraceae	Siam weed	Ewe akintola	Leaves		The leaves are boiled in water. The decoction is taken orally or used to bathe.
	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime	Osan wewe	Leaves		The leaves boiled together with leaves of pawpaw and leaves of lemon grass. The decoction is taken orally.
	<i>Cymbopogon citratus</i> (DC.) Strapt	Poaceae	Lemon grass	Ewe tea	Leaves		The matured leaves with the leaves of Mango are boiled together in water and the decoction taken orally
	<i>Mangifera indica</i> L.	Anacardiaceae	Mango	Mongoro	Leaves Bark	and	The leaves of <i>Mangifera indica</i> and the leaves of <i>Ocimum basilicum</i> are boiled together with water and the decoction taken orally
	<i>Ocimum basilicum</i> L.	Lamiaceae	Basil plant	Efinrin-aja	Leaves		The leaves with the bark of Mango boiled together in water and the decoction is taken orally.
	<i>Psidium guajava</i> L.	Myrtaceae	Guava	Gurofa	Leaves		The leaves are boiled in water and the decoction used as steam bathe
<i>Vernonia amygdalina</i> Delile	Asteraceae	Bitter leaf	Ewuro	Leaves		The leaves are squeezed in water with a little salt and the solution are taken orally	
<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Ginger	Atale funfun	Rhizome		The rhizome ground together with soaked maize slug use to prepare pap for the patient. The rhizome taken in water and the decoction taken orally. The rhizome fresh or dried, crushed, grated or powdered are used to season stew.	
	<i>Anacardium occidentale</i> L.	Anacardiaceae	Cashew	Kaju	Stem		The stem of the plant is used as chewing stick to prevent tooth decay.

Tooth Decay;	<i>Nicotiana tabacum</i> L.	Solanaceae	Tobacco	Taba	Leaves		The sundried leaves are grinded and mixed with black soap and use to bath teething infant.
	<i>Piper guineense</i> Schumach.& Thonn.	Piperaceae	Black pepper	Iyere	Root		The root is chewed and used as tooth brush to clean the gum and tooth.
	<i>Azadirachta indica</i> A. Juss	Meliaceae	Neem tree	Dongoyaro	Stem		The tender stem is used as chewing stick to clean the teeth and gum because the juice gotten from it is believed to prevent tooth infection
	<i>Psidium guajava</i> L.	Myrtaceae	Guava	Gurofa	Stem		The stem of the plant is used as chewing stick to prevent tooth decay
Skin Disease;	<i>Senna alata</i> (L.) Roxb	Caesalpinaceae	Ringworm bush	Igi cassia	Leaves		Boil the leaves and drink the decoction
	<i>Senna occidentalis</i> (L.) Link	Caesalpinaceae	Negro coffee	Rere	Leaves and Seeds		The leaves are crushed together with the seed and used to rub the affected part
	<i>Momordica charantia</i> L.	Cucurbitaceae	Bitter gourd	Ejinrin	Leaves		The leaves are ground and mixed with ashes. Black soap is added and the mixture is used to bathe regularly
Dysentry/Diarhea/Constipation/Indigestion;	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Ibepe	Fruit		Fairly ripe fruit is eaten raw
	<i>Piper guineense</i> Schumach.& Thonn.	Piperaceae	Black pepper	Iyere	Root		The leaves are grounded together with leaves of <i>Senna alata</i> and the mixture is taken with pap.
	<i>Danielli oliveri</i> (Rolfe) Hutch. & Dalziel	Caesalpinaceae	Copal tree	Iya	Leaves		The leaves are collected and squeezed in water and the infusion taken orally
	<i>Jatropha curcas</i> L.	Euphorbiaceae	Physic nut	Ewe Lapalapa	Leaves		The leaves are collected and squeezed in water. a little quantity of salt is added and the solution is taken orally
Menstrual Disorder	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Physic nut	Ewe pupa	Leaves		The leaves are squeezed in water and filtered. The filterate is then taken orally.
Gonorrhoea	<i>Ficus exasperate</i> Vahl.	Moraceae	Sandpaper tree	Ipin	Leaves		The leaves are collected and mixed with the leaves of <i>Chrysophyllum albidum</i> (African star apple).both will be dried together and burnt into ashes. The ashes is then mixed with pap and taken orally
	<i>Kigelia Africana</i> (Lam.) Benth.	Bignomacaeae	Sausage Tree	Pandoro	Bark		The bark is put in a traditional pot with immature melon seed, potash and palm wine. Boil together with some water, and the decoction taken orally
High Body Temperature	<i>Elaeis guineensis</i> Jacq.	Arecaceae	Oil palm tree	Igi ope or Igi eyin	Seed		The oil gotten from the seed is used to massage the body

Hypertension	<i>Adansonia digitata</i> L. <i>Cochlospermum planchoni</i> Hook.f.	Bombacaceae Cochlospermaceae	Baobab Yellow ground Rose	Igi ose Oja ikoko	Root	The root are cut into small pieces and boiled in water. The decoction is taken orally.
Stimulant	<i>Nicotiana tabacum</i> L.	Solanaceae	Tobacco	Ewe taba	Leaves	The leaves are collected and sun dried, ground to powder and used as snuff or put on the tongue.
Convulsion	<i>Nicotiana tabacum</i> L.	Solanaceae	Tobacco	Ewe taba	Leaves	The leaves are crushed to extract the juice. The juice mixed with water and used to bath children.
Diabetes	<i>Vernonia amygdalina</i> Delile	Asteraceae	Bitter leaf	Ewuro	Leaves	Extract from the leaves of <i>Vernonia amygdalina</i> mixed is with pure honey and taken twice daily before food (2 spoonfull).
	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Ibepe	Fruit	Unripe <i>Carica papaya</i> peeled and soaked in water for three days One glass of the liquid is
	<i>Psidium guajava</i> L.	Myrtaceae	Guava	Gurofa	Leaves	taken thrice daily for three days <i>Psidium guajava</i> and <i>Ocimum gratissimum</i> leaves concocted and sipped slowly would have spontaneous reaction with sucrose in the blood. The treatment should be repeated intermittently
Anti Anaemic [Blood Tonic]	<i>Telfairia Occidentalis</i> Hook. F.	Cucurbitaceae	Fluted Pumpkin	Ugu	Leaves	The leaf is squeezed in water and drink. Or milk added to the extract and drink.
Typhoid Fever	<i>Allium sativum</i> L.	Liliaceae	Garlic	Ayuu	Paste	The paste of <i>Allium sativum</i> and <i>Zingiber officinale</i> boiled with citrus lemon fruit for 30 mins and taken twice daily with wine glass
	<i>Xylopia aethiopica</i> (Dunal) A. Rich.	Annonaceae	Ethiopian pepper	Eru	Paste	Paste of <i>Xylopia aethiopica</i> (fruits) <i>Vernonia amygdalina</i> leaves mixed with soap
	<i>Talinum triangulare</i> (Jacq.) Willd.	Portulacaceae	Water leaf	Gbure	Leaves	Fresh leaves of <i>Talinum triangulare</i> crushed in 2 litres of water, filtered and stored. Half a glass is taken before food twice daily.
Cough	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime	Osan wewe/ orombo weere	Juice	The juice mixed with palm oil and sugar. The mixture is often licked when necessary.
	<i>Elaeis guinensis</i> Jacq.	Arecaceae	Oil palm tree	Igi ope	Fruit	The oil extract from the fibrous layer of the fruit called palm oil is mixed with sugar and lick as often as necessary.
Cholera	<i>Parkia</i>	Mimosaceae	African locus	Igi igba	Seed	Paste from processed seeds of <i>Parkia</i>

	<i>biglobosa</i> (Jacq.) R.Br. ex Don		bean			<i>biglobosa</i> (locust beans) chewed and extract swallowed every two hours would stop the stooling and vomiting
Dewormer	<i>Citrus limon</i> (L.) Burm. F.	Rutaceae	Lemon	Osan lemon	Fruit	Two tablespoonful of <i>citrus limon</i> juice taken before meal would deworm
Whitlow	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Ibepe	Latex	Latex of <i>Carica papaya</i> applied on the affected finger three to four times daily would burst it
Yellow Fever	<i>Nauclea latifolia</i> Sm.	Rubiaceae	African Peach	Egbesi	Root	Root of <i>Nauclea latifolia</i> soaked in corn water for three days and taken one glass thrice daily before meal would clear the fever
Pile/Purgative/Laxative	<i>Senna occidentalis</i> (L.) Link	Caesalpinaceae	Negro coffee	Rere	Leaves	The leaves are collected and dried and ground to particulate (puverized) form after which it is mixed with pap and take orally
	<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Lime	Osan wewe/orombo were	Fruits	Juice of the fruit is taken raw
	<i>Momordica charantia</i> L.	Curcubitaceae	Bitter guard	Ejinrin	Leaves	By infusion
	<i>Ocimum gratissimum</i> L.	Lamiaceae	Basil plant	Efinrin odan	Leaves	Leaves of <i>Ocimum gratissimum</i> and root of <i>Zanthoxylum xanthoxyloides</i> powdered active ingredients extracted with gin and taken twice daily for one week would eliminate the pain
	<i>Ocimum basilicum</i> L. <i>Zingiber officinale</i> Roscoe.	Lamiaceae Zingiberaceae	Basil plant Ginger	Efinrin aja Atale	Leaves Rhizomes	Infusion The rhizomes with the seeds of <i>piper guineense</i> are used to prepare soup for the patient