INNSPUB

Journal of Biodiversity and Environmental Sciences (JBES)
ISSN: 2220-6663 (Print) 2222-3045 (Online)
Vol. 15, No. 5, p. 37-45, 2019
http://www.innspub.net

RESEARCH PAPER OPEN ACCESS

Medicinal plant diversity and utilization from three communities in Delta State, Nigeria

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Article published on November 30, 2019

Key words: Medicinal plants, Diversity, Utilization, Communities, Delta state University

Abstract

Many rural communities in Delta State depend upon medicinal plants for the provision of primary health care. The existence of traditional medicine depends on the knowledge of their uses as herbal medicine. A survey was carried out on medicinal plant diversity and utilization in four study sites at three different locations in Delta State, namely; Asaba, Ekwoma and Abraka. Fieldwork was carried between the period of March to May 2017. Use of semi-structured interview, participant observation and transect work were done in and around the study areas. A total of forty (40) medicinal plant species were identified from twenty-six (26) families which include Euphorbiaceae (28%), Fabaceae (12%), Asteraceae (8%) among others of remarkable medicinal importance. For this work, sixty-five (65) ailments, including malaria, asthma, rheumatoid arthritis, convulsion, diabetes mellitus, high blood pressure, ulcer, tuberculosis amongst others were recorded to be treated using medicinal plants grown from the three communities. From the results, herbs accounted for 42.5%, trees (32.5%, shrubs (15%). The leaves were discovered to be the most used part with the percentage occurrence of 35%, followed by roots with 12% among others. Percentage representations of medicinal plants surveyed from the three locations were Asaba (9.6%), Ekwoma (67.3%) and Abraka (23.1%). This work exposed the diversity and availability of medicinal plants in the study areas, their usage and importance in primary health care and how the right selection of two or more of these medicinal plants could be used in the handling of various ailments. There is the need for conservation, preservation, utilization, domestication and documentation of our biodiversity for future propagation.

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Introduction

The effects of modern human societies on traditional cultures and natural habitats have incurred huge loss of individual species, and profoundly disrupted communities of species (plants, animals and fungi). Scattered individuals who may have gone along several ages of perceptions and traditions by means of oral convention-lose their dialects, the names of things, and their place in the system of connections. In some cases new connections develop as individuals move, and this creates new or changed ethnobotanical information. Ethnobotany is the field of the interaction between plants and people (Fuller, 2013), with a special stress on traditional tribal cultures. Granting to the World Health Organization (WHO) about 65-80% of the world's population in developing countries depending essentially on plants for their chief health concern due to impoverishment and lack of access to advanced medicine (Awoyemi *et al.,* 2012). Traditional medicine as defined by Fokunang *et al.,* (2011) are health practices, cognition and belief incorporating plants, creatures and mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to treat, diagnose and prevent illnesses or maintain wellbeing (World Health Organization, 2005).

Field ethnobotany is the reflection of the human-plant relationship in places where it is visible and may be either experienced and/or documented, in stories and icons. Ethnobotany is broadly defined as the subject of the relationship between plants and people (McClatchey, 2009). Plant diversity or biodiversity is the total variance within and among species of all surviving beings and their habitats. The plants and their traditional use are part of the natural and ethnic inheritance of these positions. The loss of valuable therapeutic plant wealth due to overgrazing, farming development, natural environment degradation, cultural assimilation and deforestation as a result of population pressure and poverty has been accounted for by different analysts (Hussain *et al.,* 2007; Ibrar *et al.,* 2007; Sherand Hussain, 2007; Khan and Khatoon, 2008; Akhtar *et al.,* 2013), only the data on which medicinal plant species in particular are vulnerable and why, is lacking.

Medicinal plants have long taken on important roles in the treatment of diseases all over the world (Fallah-Hoseini *et al.,* 2006). Medicinal plants are a hotspot for a wide assortment of regular cancer prevention agents and are utilized for the treatment of sicknesses all through the world (Rafieian-Kopaie, 2012; Rafieian-Kopaie and Baradaran, 2013). Some of these properties are antimicrobial (Sharafati, 2011), anti-cancer (Shirzad, 2012), anti-diabetic (Kazemi, 2010), anti-atherosclerosis (Sajjadi, 2012), immu nomodulatory, and even Reno-protection or hepato-protective impacts (Rafieian-Kopaie *et al.,* 2013). The examinations on medicinal plants demonstrate that the vast majority of them have huge cell reinforcement action (Baradaran, 2013). In such manner various animal models including diabetes, hyperlipidemia, immune system encephalomyelitis, provocative gut ailment, ischemia-reperfusion in rat skeletal muscle or kidney, hepatotoxicity, renal toxicity, radiation damage and cataract for evaluating antioxidative impacts of medicinal plants have been explored and the vast majority of them have been treatable with explicit medicinal plants concurring, at any rate in character, to their antioxidant properties (Baradaran, 2013; Sofowora *et al.,* 2013).

Medicinal plants with antioxidant activities have likewise been proven to be useful for the prevention of coronary artery disease and cardiovascular diseases by reducing lipid peroxidation (Heidarian *et al.,* 2013). The vast majority of the medicinal plants have explicit mixes, other than antioxidants, which are viable in the treatment or prevention of diseases. In this point, medicinal plants have likewise been a dependable hotspot for the arrangement of new medications. These days, specialists more than before are subject to medicinal plants for the disclosure of new medications with fewer impacts.

This generation is tilting so much towards the role of orthodox medicine and neglecting herbal medicines made from medicinal plants. Medicinal plants have suffered neglect, especially in this generation being

ignorant of the fact that we -as Nigerians; are richly blessed with these plants all round us.

Individuals also lack the knowledge of mixing two different plant species to bring out the most effective medicine for the handling of different complaints thus, this led to this study. This study tends to create more importance on our traditional medicine, the demand for its conservation, conservation and create more awareness of medicinal plants and its relevance.

Materials and method

This research was carried out in four different sites at three locations in Delta State which include Nelson Mandela Park of ninety-five trees, along Asaba/ Benin/Lagos Expressway beside the Asaba International Airportlying approximately 06˚20'N and 06˚70'E. The park was accessed through the Asaba International Airport. The second and third sites were Ugo Resorts in Ekwuoma and Dr. Ugo Botanical Garden, also in Ekwuoma which lies approximate between 05˚79'N and 06˚11'E. The fourth site was at the Faculty of Pharmacy Botanical Garden on the Main Campus of the University, Abraka (Fig. 1). It lies between latitude 5˚45´ and 5˚50´N of the equator and longitude 60 and 6˚15´E of the Greenwich meridian.

Instruments for Data Collection

Fieldwork was carried between the periods of March – May 2017. Utilization of semi-structured interview, participant observation and transect walk were done in and around the subject regions. The most vital tools used in this investigation and identification of medicinal plants were resource persons such as herbalists, gardeners, park attendants, aged men and women, taxonomists and laboratory attendants who have the knowledge of medicinal plants and their efficiency. Several visits were also named to the battlefield with these resource persons, while for others, plant samples were collected, photographed, and showed to them to assist in identification and their medicinal purposes.

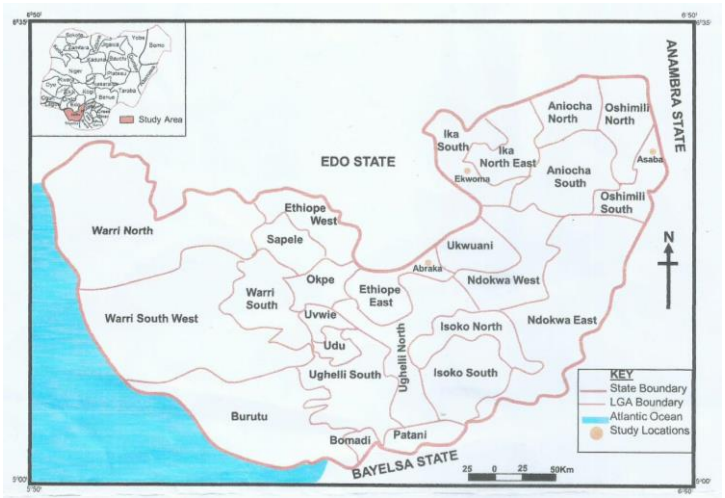

Fig. 1. Map of Delta State showing study locations.

Source: Ministry of Lands and Urban Development, Asaba, (2002).

Results

A total of forty (40) medicinal plant species were identified from twenty six (26) families which include Euphorbiaceae (26.9%), Fabaceae (11.5%), Asteraceae (7.7%) among others of remarkable medicinal importance (Fig. 1). The leaves were observed to be the most used parts with the percentage occurrence of 35%, this was followed by root with 12% amongst others (Fig. 2). Herbs accounted for 42.5%, trees (32.5%), shrubs (15%) and climbers (10%) (Fig. 3). Percentage distribution of medicinal plant surveyed from the three locations is Ekwoma (67.3%), Abraka (23.1%) and Asaba (9.6%) (Fig. 4). The botanical classification, family, common and local names of medicinal plants in the study areas are given in Table 1. For this work, sixty five (65) ailments, including

malaria, asthma, rheumatoid arthritis, diabetes mellitus, hypertension, convulsion, ulcer, tuberculosis, bronchial infection, jaundice, besity, gonorrhoea, genital, and urinary system (liver, kidney and spleen) amongst others were recorded to be treated using medicinal plants grown from these three communities (Table 2) and their mode of administrations (Table 3).

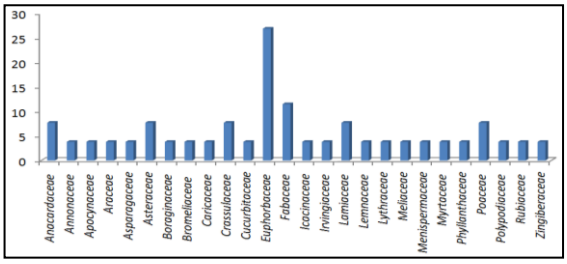

Fig. 1. Percent distribution of families recorded in the survey region.

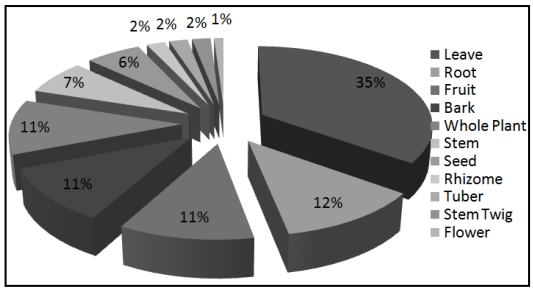

Fig. 2. Percentage distribution of plant parts used in the study area for medicinal purposes and their percentage occurrence.

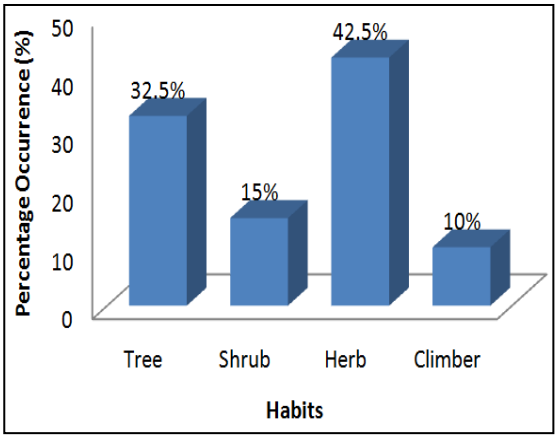

Fig. 3. Percentage occurrence of habit (life forms) of medicinal plants in the study area.

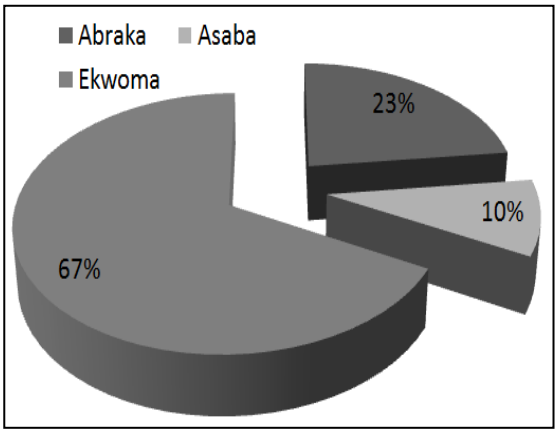

Fig. 4. Percentage distribution of medicinal plants surveyed from three locations of the study.

Table 1. Botanical classification, family, common and local names of medicinal plants in the study area.

S/N	Botanical Name	Family Name	Common Name	Local Name
1	*Acalyphagodseffiana*L.	Euphorbiaceae	*Acalypha*	Ela
2	*Acalyphawilkesiana*L.	Euphorbiaceae	Ela	Ela
3	*Alstoniacongensisn*(L.) Br.	Apocynaceae	Stool wood	Ahun
4	*Alchornealaxiflora*Benth.	Euphorbiaceae	Three-veined bead string	Pepe
5	*Ananascomosus*L.	Bromeliaceae	Pineapple	Ehin-ahun
6	*Anacardiumoccidentale*L.	Anacardaceae	Cashew nut tree	Kasu
7	*Aspillaafricana*Thouars	Asteraceae	Haemorrhage plant	Nyunrinyun
8	*Azadirachtaindica*A. Juss	Meliaceae	Neem plant	Dongoyanro
9	*Bambusa vulgaris*Schrad	Poaceae	Bamboo	Oparun
10	*Bryophyllumpinnatum*Lam	Crassulaceae	Resurrection plant	Abamoda
11	*Carica papaya*L.	Caricaceae	Pawpaw	Ibepe
12	*Centrosemapubescens*Benth.	Fabaceae	Fodder pea	Ewa-ahun
13	*Chasmantheradependens*H.	Menispermaceae	*Chasmanthera*	Ato-olori-raun
14	*Chromolaenaodorata*L.	Asteraceae	Siam weed	Awolowo, Akintola
15	*Cnidoscolusacontifolius*Mill	Euphorbiaceae	Hospital too far	Iyana-ipaja
16	*Curcuma longa*L.	Zingiberaceae	Turmeric	Laali-pupa
17	*Croton zambesicus*Muell	Euphorbiaceae	Bushveld	Ajekobale
18	*Cymbopogon citrates* Stapf	Poaceae	Lemon grass	Koriko-oba
19	*Dalbergiellawelwitschii*Bak	Fabaceae	West African black wood.	Ewe afoso
20	*Drynarialaurentii*Christ	Polypodiaceae	*Drynaria*	Ewe imu
21	*Euphorbia unispina*N.E.Br	Euphorbiaceae	Cactus plant	Oro-adete

S/N	Botanical Name	Family Name	Common Name	Local Name
22	*Heliotropiumindicum*L.	Boraginaceae	Heliotrope	Agogo-igun
23	*Icacinatricantha*Oliv.	Icacinaceae	*Icacina*	Gbebge
24	*Kalanchoecrenata*Andrews	Crassulaceae	Never die, dog's liver, *kalanchoe*.	Odundun
25	*Mangiferaindica*L.	Anacardaceae	Mango tree	Mangolo
26	*Mucunaprurien*sL (DC)	Fabaceae	Devil bean, velvet bean, cow-itch plant.	Werepe, esisi
27	*Ocimumbasilicum* L.	Lamiaceae	Scent leaf, sweet and hairy basil.	Efirin
28	*Ocimumgratissimum*L.	Lamiaceae	Scent leaf, tea bush, basil, baleam.	Efirin-nla.
29	*Psidiumguajava*L.	Myrtaceae	Guava	Gilofa
30	*Telfariaoccidentalis*Hook	Cucurbitaceae	Flutted pumpkin	Ugwu
31	*Tetracarpidiumconophorum*Mull.Arg.	Euphorbaceae	African walnut	Asala, awusa
32	*Zingiberofficinale*Roscoe	Zingiberaceae	Ginger	Ginger
33	*Annonamuricata*L.	Annonaceae	Soursop	Sharp- sharp
34	*Pistiastratiotes*L.	Araceae	Water lettuce	Shell flower, cabbage, nile cabbage.
35	*Lemna minor*L.	Lemnaceae	Duck weed	Duck weed
36	*Morindacitrifolia*L.	Rubiaceae	Noni plant	Noni plant
37	*Irvingiagabonensis*Baill.	Irvingiaceae	Dika nut plant, African mango, sweet bush mango.	Igiri, ogbono
38	*Phyllanthusniruri*L.	Phyllanthaceae	Gale of the wind, stonebreaker, seed-under-leaf, *niruri*.	Small plant
39	*Lagerstroemia reginae*Roxb.	Lythraceae	Pride of india crape myrtle	Queen crape myrtle, Indian lilac, jarul
40	*Sansevieriatrifasciata*Prain.	Asparagaceae	Snake plant, Mother-in-Law's Tongue, viper's bowstring hemp	Whole plant

Table 2. Medicinal plants and their uses recorded in the study area.

S/N	Botanical Name	Parts Used	Medicinal Use(S)
1	*Acalyphagodseffiana*L.	Leaves	To reduce high blood pressure.
2	*Acalyphawilkesiana*L.	Leaves	Skin blemishes especially for babies, skin rashes, antimicrobial, flatulence.
3	*Alstoniacongensisn*(L.) Br.	Bark	Malaria, astringent, toothache.
4	*Alchornealaxiflora*Benth.	Stem, ives, roots, leaves.	Chewing sticks, veneral diseases, emenagogue, ring worm, antioxidant,(leaves traditional wraps for cola nuts).
5	*Ananascomosus*L.	Unripe fruit juice, ripe fruit.	Digestive problems, typhoid fever, cough, anthelmintics.
6	*Anacardiumoccidentale*L.	Bark, leaf, fruit.	Malaria, elephantiasis, leprosy, ringworm, scurvy, diabetes, warts, anthelmintics, typhoid fever, caries.
7	*Aspillaafricana*Thouars	Leaves, flowers.	Haemostatic, cleaning sores, corneal opacities, stomach disorders, tuberculosis, nervous disorders, guinea worm, gonorrhea, skin rash.
8	*Azadirachtaindica*A. Juss	Leaves, stem-bark, seeds.	Malaria, jaundice, syphilis, anthelminthics, skin disease, eczema, ringworm, emetic, laxative, sore throat.
9	*Bambusa vulgaris*Schrad	Leaves, young shoots.	Gonorrhea, abortifacient, anthelmentics, skin rashes of Hiv/Aids, emmenagogue.
10	*Bryophyllumpinnatum*Lam	Leaves, roots, leaf sap.	Cough, diarrhea, dysentery, wounds, fever, sedatives, diuretic, abscesses, antifungal, epilepsy, antimicrobial, anticancer.
11	*Carica papaya*L.	Leaves, seeds, fruits.	Gonorrhea, syphilis, amoebic dysentery, roundworms, abortifacient, emmenagogue, malaria, convulsion, mental disorder, medicinal recipes, papain enzyme as meat tenderizer.
12	*Centrosemapubescens*Benth.	Leaves	Skin diseses
13	*Chasmantheradependens*H.	Roots	Diuretics, antigonococcal, for management of fractures.
14	*Chromolaenaodorata*L.	Leaves, stem-twigs.	Antimicrobial, dysentery, headache, malaria fever, toothache, haemostatic, skin diseases.
15	*Cnidoscolusacontifolius*Mill	Leaves, sap	Diuretic, antimicrobial.
16	*Curcuma longa*L.	Tubers	Jaundice, eye wash, skin diseases, vermifuge, yellow fever, ringworm, anti-tumor, carminative, malaria, antimicrobial.
17	*Croton zambesicus*Muell	Leaves, twigs.	Piles, gonorrhea, arthritis, diarrhea, impotence.
18	*Cymbopogon citrates* Stapf	Leaves, roots.	Malaria, cough, sprains, lumbago, stomach tonic, stimulant, cold, diaphoretic, diuretic, refrigerant, ringworm.
19	*Dalbergiellawelwitschii*Bak	Stem, twigs, roots, leaves.	Bronchial ailments, purgative, anthelmintics, menstrual disorder.
20	*Drynarialaurentii*Christ	Whole plant, leaves.	Veneral diseases.

S/N	Botanical Name	Parts Used	Medicinal Use(S)
21	*Euphorbia unispina*N.E.Br	Exudate	Antidote for snake bites, fractures, skin diseases, antihelmintics.
22	*Heliotropiumindicum*L.	Whole plant	Convulsions, anticancer, worms, rectal enema, mouth wash.
23	*Icacinatricantha*Oliv.	Tubers, leaves exudates, root.	Rheumatism, aphrodisiac, toothache, anthelmintics, purgative, abortificient, wound dermatphytosis.
24	*Kalanchoecrenata*Andrews	Leaves, roots, whole plant.	Chronic cough, small pox, convulsion, gonorhoea, rheumatism, earproblem, headache, wounds, asthma, palpitation.
25	*Mangiferaindica*L.	Leaves, root, stem, bark.	Malaria, high blood pressure, insomnia, diabetes, diarrhea, asthma, haemorrhage, skin lesions, cough.
26	*Mucunaprurien*sL (DC)	Leaves, hair on the pod.	Intestinal worms, genito-urinary diseases, blood booster.
27	*Ocimumbasilicum* L.	Whole plant	Gonorrhea, catarrhal conditions, cough, constipation, dysentery, ringworm, blood tonic, antipyretic, anthelmintics, carminative, stimulant.
28	*Ocimumgratissimum*L.	Leaves, whole plant.	Cough, diarrhea, convulsion, fever, cold, bronchitis, colic, insect repellant, pile, hypertension, diabetes, antimicrobial, antibacterial.
29	*Psidiumguajava*L.	Leaves, stem-bark, fruit.	Fever, diarrhea, stomachache, cough, laxative, dysentery, irregular menstruation, malaria.
30	*Telfariaoccidentalis*Hook	Leaves, seeds.	Blood tonic, convulsion, gastro-intestinal disorders.
31	*Tetracarpidiumconophorum* Mull.Arg.	Leaves, fruits, bark.	Masticatory, giddiness, thrush, anthelmintics, toothache, syphilis, dysentery.
32	*Zingiberofficinale*Roscoe	Rhizome	Cold, cough, asthma, stimulant, rheumatism, piles, hepatitis, liver diseases, diuretic, headache, digestive disorder, breast swelling related to menstrual cycle, anthelmintics, carminative, typhoid fever, obesity, malaria.
33	*Annonamuricata*L.	Leaves, fruits	Fever, dysentery.
34	*Pistiastratiotes*L.	Whole plant	Antidiabetic, antiseptic, antifungal, antimicrobial, diuretic, laxative, emollient.
35	*Lemna minor*L.	Whole plant	The whole plant is alterative, antipruritic, antiscorbutic, soporific.
	*Morindacitrifolia*L.	Fruits, leaves, bark,	Used to cure arthritis, diabetes, high blood pressure, muscle aches, heart disease, AIDS, cancers, preparations to aid childbirth-bark, gastric ulcers, sprains, depression, moisturizer sensility, poor digestion, atherosclerosis, circulation problems and drug addiction.
37	*Irvingiagabonensis*Baill.	Fruits, pulp, seeds, bark, kernels, leaves, or roots	Diabetes, analgesic, antimicrobial, bark is used to cure cough. Used to cook soup, used to improve bowel function, aids detoxification pathways, obesity, lowers cholesterol level, increases antioxidant and gastrointestinal activity.
38	*Phyllanthusniruri*L.	Whole plant	Used in the problems of stomach, analgesic, hypertension, anti spasmodic, leprosy, ring worm, hair disorders, genitourinary system, liver, kidney and spleen, astringent, laxative, carminative, gonorrhea, constipation, stomach ache, dyspepsia, opthalmia, for relieving flu, dropsy, diabetes, jaundice, asthma, bronchial infection, cirrhosis, viral hepatitis.
39	*Lagerstroemia reginae*Roxb.	Leaves, fruits, bark, seeds, roots, whole plant	Narcotic, purgative, astringent, stimulant, and febrifuge, stomach problems, weight loss, diabetes mellitus.
40	*Sansevieriatrifasciata*Prain.	Leaves, rhizome	Used to treat shingles-herpes zoster, earache or ear infection, air filtering i.e removes environmental toxins-benzene, nitrogen oxides, formaldehyde, toluene, xylene, trichloroethylene, but not ammonia anti-bacterial, anti-microbial, anti-diabetic, fever, inflammatory disorders

Table 3. Some medicinal plants and their mode of administration.

S/N	Botanical Name	Parts Used	Mode of Administration
1	*Acalyphagodseffiana*	Leaves	For emergency, rinse three leaves, chew and swallow for hypertension and continue till symptom subside
2	*Acalyphawilkesiana*	Leaves	Boil and dilute with little cold water to reduce the temperature and use to bath the baby. Do not towel the baby and allow the water to dry on the baby
3	*Alstoniacongensis*	Leaves and Bark	Boil both parts together and take a glass morning and evening till pain is relieved for body pain
4	*Ananascomosus*	Unripe fruit juice, ripe fruit.	Drink the juice one glass morning and evening for stomach coolant or chew the ripe fruit
5	*Anacardiumoccidentale*	Bark, leaf, fruit.	The fresh leaves are added to fresh guava leaves grounded with crayfish or fish and used to cook pepper soup to detoxify the stomach
6	*Azadirachtaindica*	Leaves, stem-bark, seeds.	For emergency squeeze or boil the leaves with water and salt. Drink one glass morning and evening till symptom subside for fever and pain

S/N	Botanical Name	Parts Used	Mode of Administration
7	*Bambusa vulgaris*	Leaves, young shoots.	The leaves are boiled and used to massage stroke patients morning and evening. The new shoots are used for pile.
8	*Bryophyllumpinnatum*	Leaves, roots, leaf sap.	Heat up the leaves on fire, squeeze out the juice and give two to three teaspoons three to four hours daily till the cough clears off completely. For adults, two shots three to four hours daily.
9	*Carica papaya*	Leaves, seeds, fruits.	The fresh leaves are boiled with other leaves and with pap water for typhoid. For mature seeds, dry and chew about five seeds for fever and dizziness for three days
10	*Chromolaenaodorata*	Leaves, stem-twigs.	Squeeze the leaves and drink a glass every two hours till bleeding subside. Squeeze and place on a cut to stop bleeding
11	*Curcuma longa*	Tubers	Use the tuber to cook by grinding into paste. Drink or eat with anything for about a week to clear yellow fever and malaria
12	*Icacinatricantha*	Tubers, leaves exudates, root.	Put native medicine on the leave and push into the anus of the patient to treat pile for as long as the pile remains
13	*Ocimumgratissimum*	Leaves, whole plant.	Squeeze the leaves and add water, squeeze two balls of lime with salt and drink a glass morning and evening for dysentery or grind into paste and use to prepare soup
14	*Phyllanthusniruri*	Whole plant	Add leaves to hot gin and take one shot before breakfast for stomach ache. Boil root for 15 minutes and drink for fever
15	*Drynarialaurentii*	Whole plant, leaves.	Pound only the leaves plus native chalk and gin or water. Ensure that the sticks are removed and use to rub swollen legs caused by poison once daily
16	*Alstoniacongensis*	Leaves and bark	Cook the leaves and take a glass morning and evening for body and stomach pains till pain is relieved
17	*Aspilla Africana*	Leaves, flowers.	Pound the leaves and place on the surface of cut or wound and tie up for two days
18	*Croton zambesicus*	Leaves, twigs.	Boil the leaves with water and drink a glass two to three times daily to threat infections
19	*Mucunapruriens*	Leaves, hair on the pod.	Squeeze enough leaves to get out the juice and drink a glass morning and evening as a blood booster
20	*Kalanchoecrenata*	Leaves, roots, whole plant.	Cook the leaves using snail shell to ease heavy cough and to help the person spite out the sputum

Discussion

The usage of medicinal plants constitutes an important component of traditional medicine, which is a percentage of African heritage. Though modern or orthodox medicine has improved the lots of many people worldwide, it is notable that in many cultures, modern medicine complements traditional practices, as is obtainable in industrialized societies for example, China and India (Odugbemi, 2008). In the past, humans have thought of treatment of diseases when they took place in themselves and their relatives and since the flora in nature, have attracted their attention, they commence to test medicinal plants by experience and repeated tests. Indeed, medicinal plants are natural and easily accessible sources which contribute to treating diseases thanks to effective substances found in them. The medicinal plants help to not only treat diseases, but also contribute to wellness maintenance and preventing diseases.Even, the medicinal plants have been proven to induce recovery from dangerous and hard to treat diseases (Bussman and Sharon, 2006).

This study has revealed that medicinal plants still play a vital role in primary health care. During the survey, it was observed that most of the medicinal plants gotten from the four locations were from the family of *Euphor biaceae* (e.g *Acalyphagods effiana, Alchorne alaxiflora* and *Croton zambesicus*) having the highest percentage, followed by the family *Anacardaceae, Annonaceae, Apocynaceae, Araceae, Asparagaceae, Boraginaceae, Bromeliaceae, Bromeliaceae, Caricaceae, Crassulaaceae, Cucurbitaceaea, Icacinaceae, Irvingiaceae, Labiatae, Lemnaceae, Lythraceae, Meliaceae, Menispermaceae, Myrtaceae, Poaceae, Polypodiaceae, Rubiaceae* and *Zingiberaceae.*

It is worthy of note that the right combination of two or more of these medicinal plants can give better solutions in the treatment of various diseases.

CONCLUSION

This work showed the variety and availability of medicinal plants found in the four different sites – Nelson Mandela's Park of ninety-five trees Asaba, Ugo Resorts, Ekwuoma, Dr. Ugo Botanical Garden,

Ekwuoma, and Pharmacy Botanical garden, site three, Abraka, all in Delta State. This is an indication that the study locations and sites are rich in plant diversity. However, medicinal plants used in local health traditions are gradually becoming extinct due to over utilization, population explosion and anthropogenic factors. In order to reverse this trend, domestication of wild medicinal plants is of utmost importance. This would augment the income of rural people and in turn assist in the preservation of these plant species.

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