



Original Research Article

Ethnomedicinal survey of medicinal plants in Olomoro Clan, Isoko South Local Government Area, Delta State, Nigeria

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***¹Ubafe Martha Oke
and
¹Ejale U. Angela**

¹Department of Plant Biology and Biotechnology, University of Benin, Benin-City, Nigeria.

*Corresponding Author
Email: ubafie9@gmail.com

The study was conducted with the aim to document the medicinal plants used by the people of Olomoro community in the management of their health issues. The ethnomedicinal data was obtained through a well-structured questionnaires and oral interview. The survey revealed that thirty (30) plants belonging to twenty- six (26) families were commonly used to treat and manage ailments like measles, fever, malaria, eczema, nematodes infection, sickle cell anemia, diuresis, chicken pox, small pox, pile, stomach aches, ringworm, high blood pressure, stroke and constipation in the community. Information on the names of plants and plant parts used were also documented. The survey showed that the plants mostly used for these treatments were *Costus afer* (common name, monkey sugar, local name, *eti*); *Psidium guajava*,(common name, Guava, local name, *Iguava*) *Mangifera indica*,(common name mango, local name, *Etorioemago*) *Azadirachta indica*,(common name Neem, local name, *Idogoyaro*) *Chromolaena odorata*,(common name, Siam weed, local name, *Ishokope*) *Citrus aurantifolia*,(common name, Lime, local name, *Utioghagha*) *Cymbopogon citratus*, (common name, Lemon grass, local name, *Okoso*); *Ocimum gratissimum* (common name, Scent leaf, local name, *Obioran*) *Vernonia amygdalina* (common name, Bitter leaf, local name, *Oligbo*); and *Carica papaya* (common name Pawpaw, local name *Eto*). The plant parts mostly used are the leaves, followed by roots, bark, fruits and stem. Individuals who were 56years [fifty six years] and above patronized the traditional healers more than the younger generation. Generally, more people tend to depend more on traditional healers than orthodox medicine practitioners from the oral interviews conducted. This could be due to the none accessibility to orthodox medicine. There is therefore a grave need to study these plants so that the community members can be properly advised on the safe use of these medicinal plants.

Keywords: Olomoro, traditional, community, town, practitioners, ethnomedicinal, orthodox.

INTRODUCTION

Ethno medicine which is commonly known as traditional medicine has played a keen role in primary health care

delivery in Nigeria (Eluyoba, 2005) ethno-medicine has been defined as the study of the traditional medicine



Figure 1: The study area, Isoko south LGA of Delta State

practiced by various ethnic groups and indigenous people. Ethno medicine as a discipline is multi-disciplinary as it involves the use of plants and spiritualism which has been the source of treatment of diseases by individual for centuries. (Lowe et al., 2000). Research interests and activities in the area of ethno medicine have greatly increased in the last decades. Since the inception of ethno medicine as a discipline, scientific research has made tremendous contribution to the understanding of traditional subsistence, medical knowledge and practice. The concept of ethno medicine has long been ignored by many biomedical practitioners (orthodox medicine) for various reasons. For example, biomedical practitioners argued that the chemical composition, dosages and toxicity of the plants used in ethno medicine are not clearly defined and stated (Lowe et al., 2000). However, it is interesting to note that the ethno medicinal uses of plants are one of the most successful criteria used by the pharmaceutical industry in finding new therapeutic agents for the various fields of biomedicine. Some outstanding medicinal drugs which have been developed from the ethno medicinal uses of plants include: vinblastine and vincristine from *Catharanthus roseus* (the Periwinkle) used for treating acute lymphoma, acute leukemia, reserpine from *Rauwolfia serpentina* (Indian snake root) used for treating hypertension, aspirin from *Salix purpurea* (willow) used for treating inflammation, pain and thrombosis and quinine from *Cinchona pubescens* (cinchona) used for treating malaria.

Ethno medical practices and beliefs are part of a total belief system that transcends various class, ethnicity and

religious belief in such a manner that the terms “folk or traditional” can be used to describe practices that are truly universal (Lowe et al., 2000). According to World Health Organization (WHO), ethno medicine has maintained its popularity in all regions of developing world and its use is rapidly expanding in the industrialized countries (WHO, 2003). For instance, in China traditional herbal preparation accounts for 30–50% of the total medicinal consumption. In Ghana, Mali, Nigeria and Zambia, the first line of treatment for 60% of children with malaria is the use of herbal remedy at home. In San Francisco, London and South Africa, 70% of people living with HIV/AIDS use traditional medicine.

In Nigeria, many indigenous people rely on plants as a means of solving their health issues. The need for a natural means for curing ailments is becoming more and more relevant every day in the world, especially in Nigeria due to the high cost of purchase of genuine drugs which are barely affordable and the prevalence of adulterated drugs which has resulted in the loss of many lives. It has been estimated that 66-85% of the world’s populations depend directly on as medicine (Jansern et al., 2010; Raphael 2011). Medicinal values of these plants lie in some chemical substances that produce definite physiological action on human body (Edeoga and Gomina, 2000). The use of plant in medicine is an ancient practice common to all societies including Africa (WHO 2003).

The study area (Olomoro) is located in Isoko south Local Government Area (LGA) with its headquarters at Oleh of Delta State, Nigeria (Figure 1). It occupies a low-lying section of the larger Niger Delta Basin. The vegetation in

the region is characterized by deciduous and evergreen forests, with patches of mangrove. The traditional occupation of the people of Olomoro include farming, fishing with few persons working as civic servant in government parastatal. The people practice traditional medicine; however, there are currently no reports on the ethno medical survey of plants used by the people. The aim of the study was to carry out a survey of ethno medical plants used by the people of Olomoro to treat and manage ailments.

MATERIALS AND METHODS

Survey information

Well structured questionnaires were evenly distributed between the people of Olomoro clan in Isoko South Local Government Area of Delta State. The survey covered the three quarters and nine streets in Olomoro clan. The quarters include: Ukoli, which has three main streets (Eteso, Ivieto and Enurhu); Uruabe which has three main streets (Ekrewholowho, Ekretire); and Egbo which has three main streets (Urhuworu, Ekreku and Ojakwro). The structured questionnaires was distributed to ascertain the various medicinal plants used by the indigenous people of Olomoro community to manage and treat ailments.

A total of 150 questionnaires were evenly distributed between the three quarters of Olomoro community but only 120 questionnaires were retrieved at the end of the exercise. The key informants include elderly people (56 years and above), herbalist and local traders in the study area.

Data collection

Information on the Ethno medicinal uses of plants were obtained between the months of September to December, 2015 on four consecutive visits to the study area and a total of one hundred and twenty (120) people responded to the questionnaires. The survey revealed a total of thirty (30) plants being used by the people of Olomoro clan to treat ailments.

The local names of plants used, parts used and ethno medicinal uses of the plants were provided by herbal practitioners, elders who reside in the community and traditional birth attendants. The plants were later identified and authenticated at the herbarium, Department of Plant Biology and Biotechnology, University of Benin, Benin city, Nigeria,

RESULTS

The ethno medicinal survey conducted in Olomoro town revealed that a total of thirty (30) plant species distributed among 26 families. (Table 1) were used by the indigenous

people to treat and manage their health conditions. From the result obtained, the family of arecaceae has the highest frequency of occurrence having three (3) plant species followed by zingiberaceae, anarcadiaceae, asteraceae, poaceae and liliaceae which have two (2) plant species respectively. The other families have one species each. (Table 1)

Survey analysis

Out of the 120 people that responded to the structured questionnaires, 58.33% were males while 41.67% were females (Figure 2).

The survey revealed the occupations engaged by the people of Olomoro community which include farming, trading, trado-medical practice while a few are civic servant working in different government parastatal. The largest group of respondent engaged in farming against the other occupations (Figure 3). It was also observed that some people engage in more than one occupation.

The age group of respondents range from 26 – 56 and above. The age group between 56 and above responded mostly to the structured questions. This could be because of their life experiences and level of exposure (Figure 4).

From the educational point of view, people with secondary education happens to have great insight and knowledge of folk medicine when compare to primary and higher education, as they (secondary education) responded mostly to the administered questionnaires (Figure 5).

The various religions encounter in the survey area are present in (Figure 6) with Christianity having the highest number. This is to say that most people in Olomoro community are Christians and does not see folk medicine as a practice of 'witch craft'.

The different tribes encounter during the survey are express in (Figure 7) with the people from the Isoko speaking tribe having the highest number meaning they responded more to the administer questionnaires.

The survey revealed that the leaves of a plant were mostly used in the preparation of herbal recipes (37.5%), followed by the root (25%), bark (16.6%), fruits (12.5% and finally stem (8.3%) as shown in (Figure 8).

From the study, it was observed that various plants were used to treat various ailments by the indigenous people of Olomoro (Figure 9). The study also revealed that *Vernonia amygdalina* and *Ocimum gratissimum* are mostly used to treat ailments like diabetes, skin diseases, eye infection, malaria and stomach ache.

DISCUSSION

The survey on the ethno medicinal uses of plants by the people of Olomoro community revealed that the community is rich in herbal medicine and the people in the community have great knowledge of medicinal plant. *Anarcadium*

Table 1. Medicinal plants used in the management of ailments by Olomoro community

S/N	FAMILY	Scientific name	Common name	Native name	Part used	Ethnomedicinal uses
1.	Costaceae	<i>Costus afer</i> ker Gawl	Monkey sugar cane	Eti	Bark	It is used in the treatment of threatening abortion and conjunctivitis (redness of eyes). To treat threatening abortion, the bark of the plant is peeled, pounded and squeezed to extract its juice. A glassful (236.6ml) of the juice is taken twice daily for three to four days. To treat conjunctivitis, the juice is used as eye drop. Two to four drops is applied to the affected eye until its cleared
2.	Myrataceae	<i>Psidium guajava</i> L.	Guava	Iguava	Leaves	<i>Psidium guajava</i> is used in the treatment of diarrhea, fever and management of diabetes. To treat diarrhea and diabetes, fresh leaves of <i>psidium guajava</i> and <i>Mangifera indica</i> (mango) leaves are boiled in water. A glassful is taken twice daily. To treat fever, fresh leaves of <i>psidium guajava</i> and <i>Carica papaya</i> are boiled in water. The water is later used to bath the patient with fever.
3.	Anacardiaceae	<i>Mangifera Indica</i> . L	Mango	Etorioemango	Leave and bark	<i>Mangifera indica</i> is used to treat malaria, diarrhea and diabetes. The stem, bark and leave of <i>Mangifera indica</i> , fallen leaves of <i>Carica papaya</i> , <i>Azadirachta indica</i> and <i>Moringa lucida</i> are boiled and drank twice daily for three to four days against malaria. The powder of young leaves is used to treat diarrhea and diabetes
4.	Meliaceae	<i>Azadirachta Indica</i> A. Juss	Neem	Idogoyaro	Leaf	<i>Azadirachta Indica</i> is used to treat pile, chicken pox and small pox, malaria, ulcer, wound, conjunctivitis, ear defect and tooth ache To treat pile, the seeds are burnt, powdered and mixed with sugar or honey. A full table spoon (14.78 ml) is taken daily and a glass of water is taken immediately to dilute the mixture. Drinking or bathing with leaves decoction or infusion is a remedy for chicken pox and small pox. Decoction of leaves of <i>Azadirachta indica</i> with <i>Cymbopogon citratus</i> (lemon grass) is a wonderful recipe for malaria. Decoction of fresh leaf serves as a vermifuge for ulcers and wounds. Juice squeezed from leaves with a little water is used as an eye drop. Mixture of leaves extract and honey is a remedy for ear ailment.
5.	Asteraceae	<i>Chromolaena odorata</i> (L.) R. King & H. Robinson	Awolowo or Siam weed	Ishokope	Leaf	<i>Chromolaena odorata</i> is used to treat tooth ache, stomach pain and malaria. The leaves are chewed and this help to relief the pain and also treat the tooth ache. Mashed leaves extract are used for stomach upset and the sap from leaves are used to treat wounds. To treat malaria, decoction of leaves and stem is take twice daily.

Table 1. Cont.

6.	Rutaceae	<i>Citrus aurantifolia</i> . (Christm.) Swingle	Lime	Utioghagha	Fruit	<p><i>Citrus aurantifolia</i> is used to treat stomach ache, feverish condition and cough.</p> <p>To treat stomach ache, decoction of fruits and Lipton is taken twice daily.</p> <p>A glassful decoction of the bark and roots is a good remedy for feverish condition</p>
7.	Poaceae	<i>Cymbopogon citrates</i> (DC.) Stapf	Lemon Grass	Okosi	Leaf	<p><i>Cymbopogon citratus</i> is used to treat cough, malaria, chest pain and asthma.</p> <p>To treat cough, a glassful decoction of leaves, sliced onion bulbs and honey is taken twice daily for three to four days.</p> <p>Infusion or decoction of leaves <i>C.citratus</i>, <i>O. gratissimum</i> and <i>C. papaya</i> is a vermifuge for malaria</p> <p>Decoction of <i>C.citratus</i>, and <i>O. gratissimum</i> is a good recipe for asthma because it helps to breakdown proteus (mucus) build up and widen the air passage.</p>
8.	Lamiaceae	<i>Ocimum gratissimum</i> (L.)	Scent Leaf	Obioran	Leaf	<p><i>Ocimum gratissimum</i> is used to treat stroke, constipation and worm in the Gastro intestinal tract (GIT) and diabetes mellitus.</p> <p>The liquid extract of the leaves, liquid from snail and the person urine is used to treat stroke.</p> <p>A glass of leaves extract taken before meal is a remedy for constipation as well as worms in the Gastro intestinal Tract (GIT).</p> <p>Decoction of <i>Ocimum gratissimum</i> leaves and Mistletoe (<i>Viscum album</i>) is a wonderful recipe for diabetes.</p>
9.	Asteraceae	<i>Vernonia amygdalina</i> (Delile)	Bitter leaf	Oligbo	Leaf	<p><i>Vernonia amygdalina</i> is used to treat measles, chicken and small pox, pile, stomach ache, rheumatism, malaria and hyperglycemia</p> <p>A table spoon of the undiluted leaves extract with a pinch of salt is a good remedy for stomach upset</p> <p>To treat skin infection such as ringworm, itching, rashes and eczema, pure undiluted extract of bitter leaf is apply to the affected part daily until the scare disappears.</p> <p>To treat measles, the leaves are mashed, squeezed and mixed with palm wine. The mixture is robbed as cream until the symptoms disappear</p> <p>A decoction of the leaves, lime and orange juice taken for a forth night is a recipe against pile.</p> <p>To treat hyperglycemia, the undiluted extract of mashed leaf is taken twice daily until the sugar level decreases.</p> <p>Infusion of bark and stem is used as a vermifuge for rheumatism.</p> <p>Infusion of leaves is used to treat fever as quinine substitute for malaria</p>

Table 1. Cont.

10.	Caricaceae	<i>Carica papaya</i> . L	Pawpaw	Eto	fruit and leaf	<i>Carica papaya</i> is used to treat diuresis, malaria, eczema sickle cell anemia and hypertension. Slices of unripe fruit mixed with garlic, fermented for 3 days is used as diuretic. Decoction of seed, unripe pineapple, lime sugar cane and Lipton tea has anti-malaria effects. Sap from unripe fruit of trunk is used to treat eczema, razor bumps and nematode infestation Decoction of fresh leaves of <i>Carica papaya</i> and fresh leaves of <i>Mangifera indica</i> is a good recipe of sickle cell as the mixture serves as blood tonics A decoction of fresh leaves and native chalk serves as vermifuge for hypertension.
11.	Crassulaceae	<i>Bryophyllum pinnatum</i> (Lam) Oken	Resurrection plant	Ebeokpokpa	Leaf	<i>Bryophyllum pinnatum</i> is used to treat cough, ear infection and baby's navel. Juice from crushed leaves extract apply to the ear helps to treat ear infection. Infusion of leaf serves as a relief to cough. To treat baby's navel, crushed leaf tie in white handkerchief along side with palm kernel oil and native pot are heated on fire. The mixture is allowed to cool and apply to the navel daily.
12.	Areaceae	<i>Elaeis guineensis</i> .Jacq	Oil palm	Edi	Seed and	<i>Elaeis guineensis</i> is used to treat poison and cough. The oil from the seed is a wonderful antidote for poison. To treat cough, the kernel is burnt, grinded and mixed with honey. A tea spoon of the mixture helps to decongest the chest and relief pains. Oil from the kernel is also a good remedy to several skin ailments and convulsion in children. Large quantity of unripe kernel nut chewed for 12weeks (3 months) is believed to prevent fibroid.
13	Euphorbiaceae	<i>Manihot esculenta</i> .Crantz	Cassava	Midaka	Leaf	<i>Manihot esculenta</i> is used to treat eye problem and snake bite. The premature root serves as treatment to eye problem like conjunctivitis . The fruit is an antidote for snake bite.
4.	Anacardiaceae	<i>Anacardium occidentale</i> .L	Cashew	Icashew	Bark and leaves	<i>Anacardium occidentale</i> is used to treat hypertension and skin infection. Decoction of the bark serves as diuretic for hypertensive patient. A tincture of the leaf is a recipe for skin infection like ringworm.
15.	Areaceae	<i>Cocos nucifera</i> .L	Coconut palm	Cocodia	Fruit	<i>Cocos nucifera</i> is used for the treatment of stomach ache and over dose drugs Coconut juice is used for the treatment of over dose of drugs. The milk from the coconut is taken for stomach ache while the burnt shell mixed with wine is a remedy for syphilis
16	Cucurbitaceae	<i>Telfairia occidentalis</i> Hook f.	Fluted pumpkin	Ime	Leaf	<i>Telfairia occidentalis</i> is used to treat dizziness, and anemia. To treat dizziness, infusion of leaf extract is taken twice daily A mixture of leaves extract and <i>Solanum lycopersicum</i> (tomato) is taken for anemia (shortage of blood)

Table 1. Cont.

17.	Sapotaceae	<i>Chrysophyllum albidum</i> .G. Don	Cherry	Utieagadava	Bark	<i>Chrysophyllum albidum</i> is used to treat malaria and yellow fever. Decoction of the bark is used for the treatment of malaria and yellow fever. The leaves are used as an emollient and also as treatment for skin eruption, diarrhea and stomach ache.
18	Araceae	<i>Colocasia esculenta</i> (L.)Schott	Cocoyam	Idu	Leaves	<i>Coocasia esculenta</i> is used in the treatment of diabetes. Sliced leaves cooked with salt and pepper eating as sauce daily reduce hyperglycemia(high sugar lever)
19.	Clusiaceae	<i>Cola nitida</i> ..Heckel	Kola nut	Ewe	Seed and root	<i>Cola nitida</i> . is used to treat cough and diabetes. The seed are chewed to treat cough and throat infection. Infusion of the root with a pinch of salt serve as a control to diabetes.
20.	Musaceae	<i>Musa sapientum</i> .L	Plantain	Ore	Leaf and shoot	<i>Musa sapientum</i> is used in the treatment of diabetes. Decoction of pounded shoot and leaf of <i>vernonia amydalina</i> taken twice dally is a recipe for diabetes.
21.	Combretaceae	<i>Terminalia catappa</i> .L	Almond tree	Ebelebo	Leaf and fruit	<i>Terminalia catappa</i> is used to manage sickle cell crises and as sedative. Decoction of the leaves, bark and stem taken twice daily help to managed sickle cell as it reduces the pains of the patient during crises. The frits when taken in large amount (quantity) serve as sedative.
22.	Rubiaceae	<i>Cinchona offinales</i> (Chin)	Chloroquine leaf	ebeichloroquine	Leaf	<i>Cinchona offinales</i> is used to treat feverish conition. A decoction or infusion of the leaf serves as a relief to malaria and other feverish condition.
23.	Moringaceae	<i>Moringa oleifera</i> .Lam	Drumstick tree	imoringa	Leaf, stem and seed	<i>Moringa oleifera</i> is used to treat diabetes and loss appetite. A decoction of fresh leaves and stem help to reduce and manage the symptom of diabetes. Two to three seeds chew daily help to restore loss appetite.
24.	Piperaceae	<i>Aframomum melegueta</i> .K. Schum	Alligator pepper	Ezie	Seed	<i>Aframomum meleguet</i> is used to treat fever and to induce labour. The seeds with carica papaya seeds are chew by pregnant women to induce labour. It can also act a decongestant to dry cough when taken with the fruits of <i>Garcina cola</i> .
25	Liliaceae	<i>Allium sativum</i> . L	Garlic		Whole plant	<i>Allium sativum</i> is used as detoxifier and also as a remedy to sexual transmitted disease like syphilis.
26	Zingiberaceae	<i>Zingiber officinales</i> .Rose	Ginger	Izinger	Underground Stem, rhizome	<i>Zingiber officinales</i> is used as detoxifier and pugative. The underground stems are blended in water. The emanating juices when taken help to cleanse and detoxify the body
27	Poaceae	<i>Zea may</i> L	Maize	Okah	Cob	<i>Zea may</i> is used to treat diabetes and emaciation (lost of weight). To treat diabetes, the fruits are grinded and mixed with water which is taken 2 to 3 times daily until symptoms disappear.
28	Steculiaceae	<i>Garcina cola acuminta</i> (P. Beau) Schott and Endi	Bitter kola	Aka	Fruit	<i>Garcina cola</i> is used to treat high blood pressure. Four to five fruits are chewed daily until the blood pressure reduces.
29	Liliaceae	<i>Alum cepa</i> .L	Onion	Utita	Bulb/ leaves	<i>Alum cepa</i> is use to treat conjunctivitis.
30	Solanaceae	<i>Capsicum annum</i> .L	Pepper	eribo	Seed	Two to three bulbs are squeeze, and the emanating juice is applied to the eyes. <i>Capsicum annum</i> is used to prepare soup meant for patients suffering from fever,

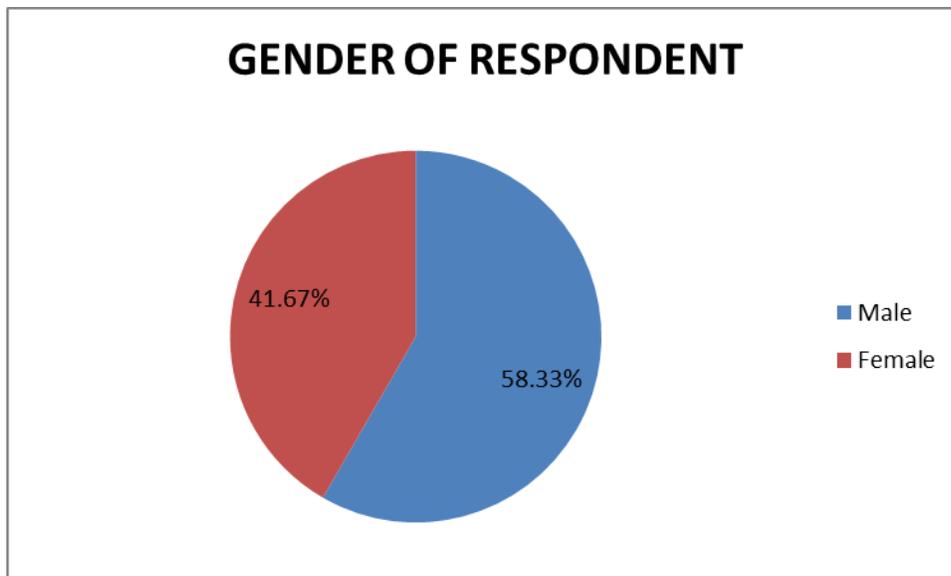


Figure 2: Gender of respondent

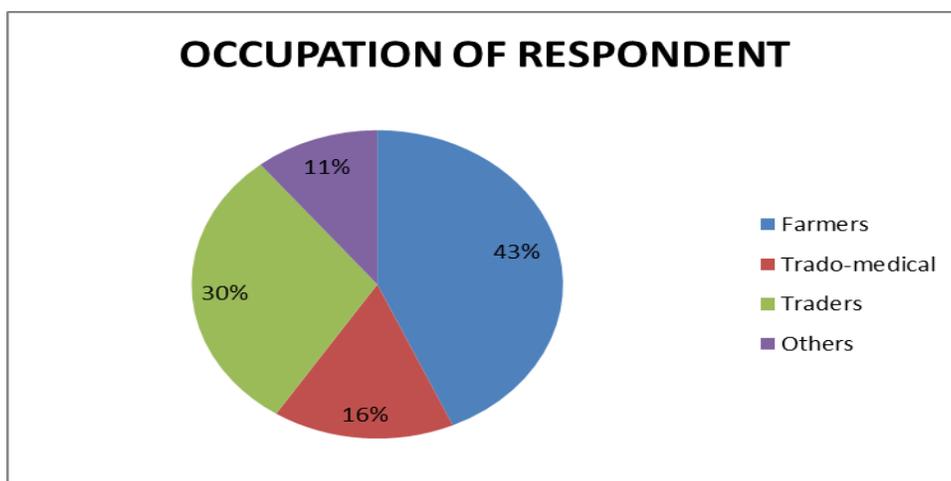


Figure 3: occupation of respondent

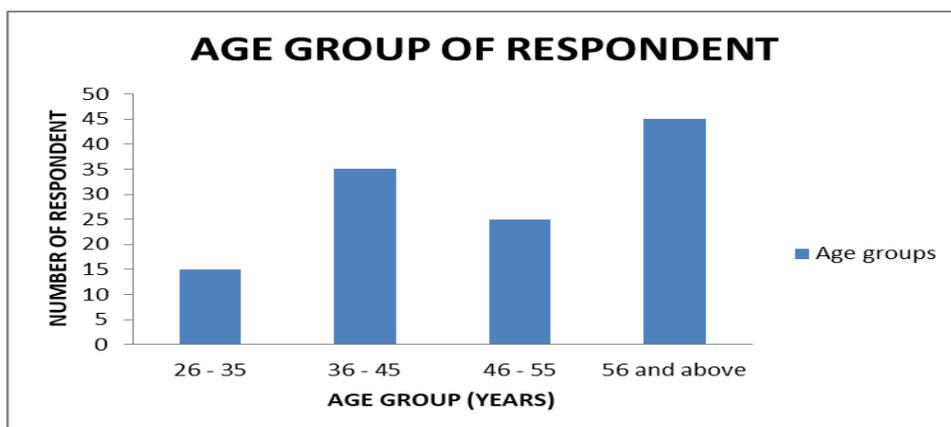


Figure 4: Age group of respondents

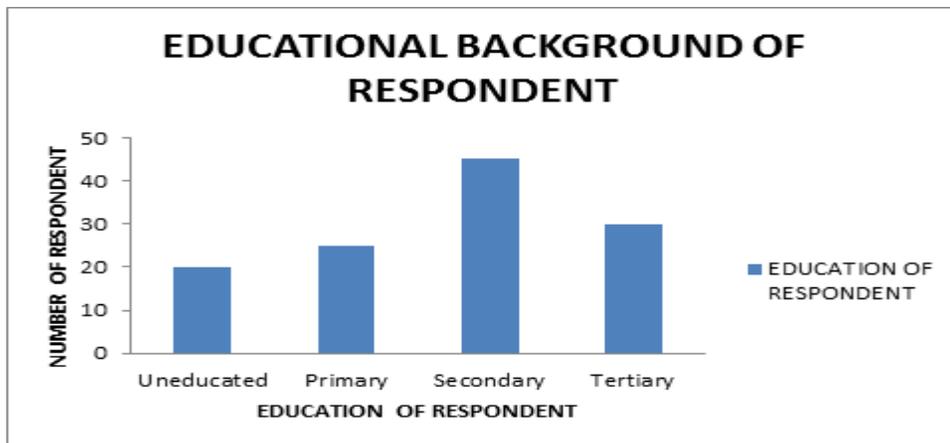


Figure 5: Educational background of respondent

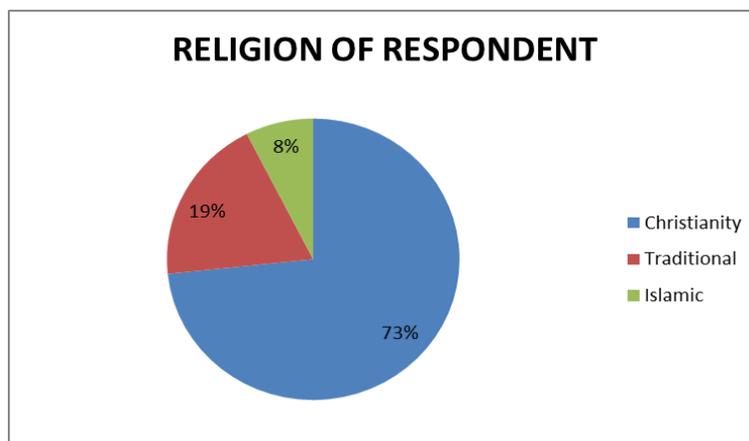


Figure 6: Religion of respondent

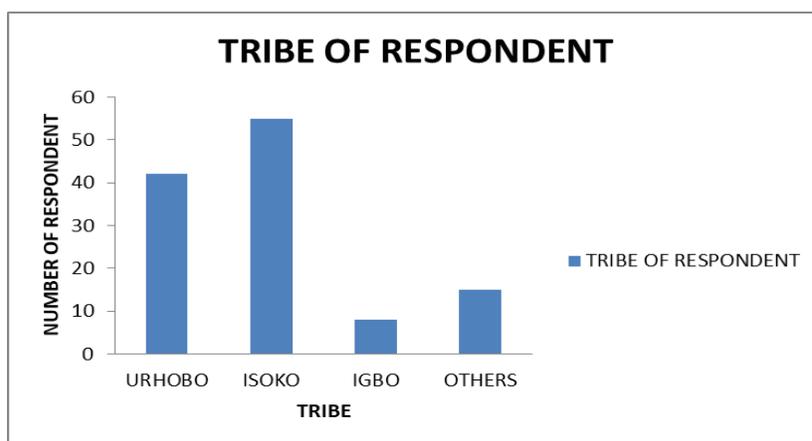


Figure 7: Tribe of respondent

occidentalis along side *Carica papaya* and *mangifera indica* leaves were found to be used by the indigenous people to combat malaria. This findings agrees with the report of

(Ogie-Odia, 2010) that the leaves of *Anarcadium occidentalis* , *Carica papaya* and *mangifera indica* are boiled and drunk for the treatment of malaria. The use of

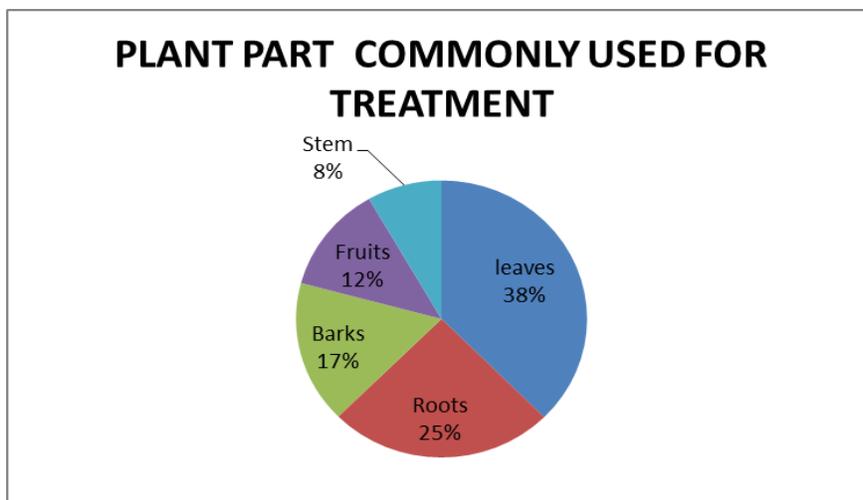


Figure 8: Part of plant

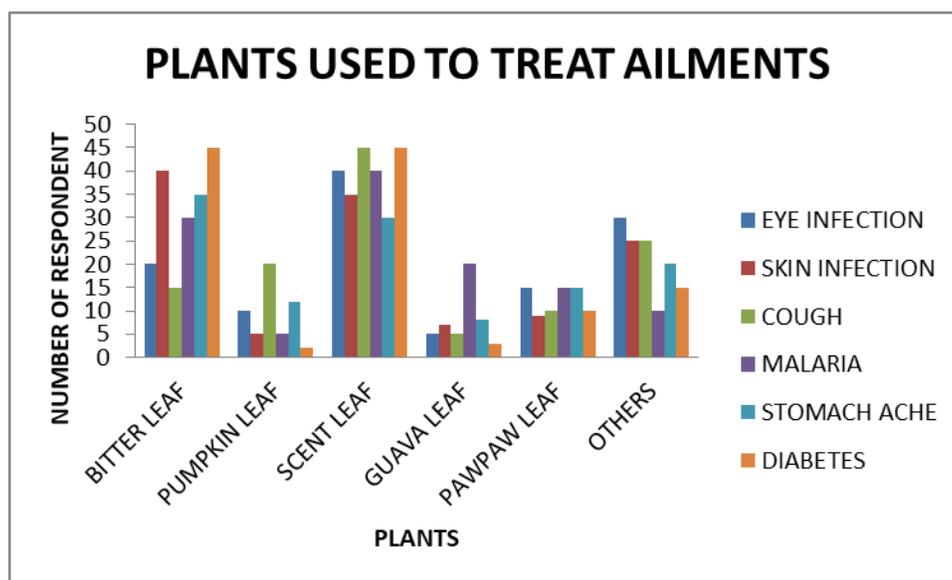


Figure 9: Plants used to treat various ailments

Bryophyllum pinnatu to treat cough, ear infection and baby navel conform to the work of(Idu et al., 2010) which reported that *Bryophyllum pinnatu* is used for healing of navel of newly born babies.

Decoction of *Azadirachta indica leaves* used for the treatment of chicken pox, wound and malaria is in line with the findings of(Okoewale and Omofoze 2001), (Idu et al., 2007 and 2008) which reported that *Azadirachta indica* leaves and barks serve as a remedy for the treatment of malaria. *Costus afer* used in treating and managing threatening abortion conform with the work of (Okwu and Okwu 2004) which reported that the use of *Costus afer* in the treatment of diarrhea, wound and hemorrhage might be attributed to the presence of tannin. The ethno medicinal

uses of *Carica papaya* in the treatment of malaria, diuresis and hypertension agrees with the findings of(Idu et al., 2005) which reported that the decoction of dried leaves added to other leaves is used for treating malaria and (Adodo, 2004) ,which reported that infusion of the green leaves treats diabetes and hypertension. The use of *Coscos nucifera* as a treatment for overdose drug is in line with research of (Etukudo, 2003) which report that the water of coconut is an antidote. Its use to treat burns and venereal disease like syphilis also agrees with Gomez 2004) which report that the ash from the kernel is used to treat burn. Ethno medicinal use of *Citrus aurantifolia* in treating stomach ache and fever agrees with the findings of (Gill, 1992) which reported that decoction of the leaves are

used for fever, jaundice and head ache.

The study also revealed the various plant parts used in the preparation of herbal recipes. It was observed that the leaves were the most commonly used part. This finding is in conformity with work reported by (Dogan et al., 2014), (Shah and Rahim, 2017); (Tareen et al., 2016). The preference of leaves against the other parts may be linked to the fact that the leaves are the photosynthetic organ of the plant and it is well known to contain pharmacological bioactive compound than other plant parts (Rokaya et al., 2014), (Ahmad et al., 2014).

CONCLUSION

The role of plants in medicine cannot be over emphasized. The study revealed the ethno medicinal uses of plants by the people of Olomoro town. From the study, it was observed that thirty plants distributed among twenty- six families were frequently used to manage and treat ailment. These plants can be further investigated and used as a potential source for making herbal drugs (traditional medicine) against some diseases.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of the paper.

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