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# ETHNOMEDICINAL SURVEY OF PLANTS USED IN TREATING SEXUALLY TRANSMITTED DISEASES IN ABIA STATE, NIGERIA

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## ABSTRACT

*The prevalence of sexually transmitted diseases in Nigeria is still high. In this study, an ethno medicinal survey was conducted to record the different plant families, species and plants parts used for the treatment of sexually transmitted diseases in Abia State of Nigeria. The result revealed that a total of 62 plant species in 48 genera from 44 families mostly the Euphorbiaceae, Fabaceae, Asteraceae, Rutaceae, and Malvaceae were used to treat diseases such as gonorrhoea, syphilis, trichonomiasis, chlamydia, urethritis, and to suppress the replication of HIV. The most plant parts used were leaves (32.5%), stem bark (23.75%) and root (20%). Other parts used included the fruits (7.5%), the seeds (3.75%) and the aerial parts (12.5%). More research is needed to extract and isolate the active chemical compounds under sound hygienic condition and study their mode of function.*

**Keywords:** Sexually transmitted diseases, Ethnomedicinal, Plants, Survey, Treatment, Abia State and Nigeria.

## Contribution/ Originality

This work contributes in the existing literatures on the use of ethnomedicinal plants in the treatment of sexually transmitted diseases in Abia State and Nigeria. This work is one of the very few studies which investigated the use of plants in treating sexually transmitted diseases such as gonorrhoea, syphilis, HIV and Chlamydia. The primary contribution of this paper is in the finding that different plant parts can be used as a remedy for sexually transmitted diseases in Abia State of Nigeria. The study therefore documents an inventory of plants, plant parts, families, botanical, common and local names of plants used in the treatment of sexually transmitted diseases in Abia State of Nigeria.

## 1. INTRODUCTION

Sexually transmitted diseases also known as venereal diseases are diseases that can be transmitted from someone who has the infection during sexual contact. They can be transmitted

through blood, semen and other body fluid from other people with sexually transmitted diseases [1]. Sexually transmitted diseases are one of the top groups of infections why patients seek medical care.

Sexually transmitted diseases are prevalent in developing countries. In sub Saharan Africa, especially Nigeria, it is of concern. Sexually transmitted diseases include: gonorrhoea, syphilis, trichomoniasis, chlamydia, urethritis and HIV. The contributing factors to the prevalence of such diseases are poverty, lack of awareness, commercial sex lifestyles, insufficient gender empowerment and lack of modern health facilities.

Some patients prefer to discuss sexually transmitted diseases with traditional medicinal practitioners and some of these plants have been found to be effective in arresting these health problems. Though some of these plants are under studied and underutilized, a good knowledge of the plants can be taken to gather information which can lead to the production of active drugs. Medicinal plants are plants with one or more of its organ having substances which can be used for therapeutic purposes or can be used as precursors for the synthesis of antimicrobial drugs [2, 3].

There is occurrence of 499 million new cases of curable sexually transmitted infections (gonorrhoea, syphilis, chlamydia and trichomoniasis) yearly. Their highest rates are among people aged 20 – 24 years old, followed by 15- 19 years old. 5% of young people contract sexually transmitted infections yearly with exclusion of HIV and other viral infections [1].

Sexually transmitted infection can lead to chronic diseases, pregnancy complications, infertility, cervical cancer and death. It can lead to pains, damage of body organs, disabilities, deafness and insanity [4].

21% of untreated syphilis leads to still birth and 9% in neonatal death in pregnant women. Sexually transmitted diseases, apart from being a public health concern in sub Saharan Africa is also a global health challenge while antimicrobial resistance to gonorrhoea is on the increase. 10 – 15% of women with untreated chlamydial infection may develop symptomatic pelvic inflammatory diseases (PID). 10 -15% of clinical PID leads to tubal factor infertility while about 95.5 million women are infected with gonorrhoea or chlamydia every year. Nigeria is the second largest country with people living with HIV with about 3.5 million people living with the disease [5] and an average national prevalence of 3.6% [6]. Nigeria has the highest number of HIV children worldwide with 60, 000 Nigerians infected with HIV in 2012 [7].

Sexually transmitted diseases such as gonorrhoea, Chlamydia, genital herpes can be transmitted during child delivery while HIV and syphilis can be passed across the placenta in vitro [8].

The people of Abia State patronize herbal medicine though there are health centers and hospitals around the State. Documentation of plants used for the treatment of sexually transmitted diseases will aid in the preservation of these plant resources and may lead to the extraction and isolation of important chemical compounds for effective drug production under clear and sound hygienic environment.

## 2. METHODS STUDY SITE

The study was carried out in Abia State of Nigeria. It is one of the States in Nigeria (Fig. 1). The State covers an area of about 5, 2437 sq km about 5.8% of the land area of Nigeria [9].



Fig-1. Map of Nigeria showing Abia State (shaded portion)

Abia State is located in Southeastern region of Nigeria laying approximately 1

## 3. DATA COLLECTION

Collection of data was carried out in the field between August 2012 and September, 2013. The information collected about the plants included local name, disease treated, parts used and method of preparation. Semi-structured interview involving questionnaires together with conversation with traditional medicine practitioners aged between 35 – 65 years were conducted in three local governments in each of the three senatorial zones of the State. Different markets, each from the three senatorial zones of the State were also visited for interview. A total of 18 respondents were interviewed in the exercise

The plants named were collected and identified in the taxonomic unit of the department of Plant Science and Biotechnology of Michael Okpara University of Agriculture, Umudike, Abia State.

## 4. RESULTS

62 plant species belonging to 44 families were identified (Table 1). The most used plant families included, Euphorbiaceae, Fabaceae, Rutaceae, Asteraceae and Malvaceae (Table 1). The

most plant parts used were leaves (32.5%), stem bark (23.75%) and root (20%). Other plant parts used were seeds (3.75%), fruits (7.5%) and aerial part (12.5%) (Fig. 2).

**Table-1.** Plants used for the treatment of sexually transmitted diseases in Abia State

S/No	Family	Botanical name	Common name	Local name(Ibo)	Part used	Uses
1	Euphorbiaceae	<i>Alchornea laxiflora</i> (Benth) Pax and K. Hoffin	Lowveld bead-string	Ubobo	Stem	Treatment of sexually transmitted diseases (STDs)
2	Euphorbiaceae	<i>Euphorbia hirta</i> L.	Asthma plant	Ogbu ani, Udani	Aerial part	Treatment of syphilis
3	Euphorbiaceae	<i>Euphorbia caducifolia</i> Haines	Leafless milk hedge	Odane inemili	Root	For treatment of STDs
4	Euphorbiaceae	<i>Alchornea cordifolia</i> (Schmun and Thonn) Muell. Arg	Christmas bush	Ububo	Leaf and bark	Treatment of gonorrhoea
5	Euphorbiaceae	<i>Margaritaria discoidea</i> (Bail) Webster	Pleasant berry	Oga ofia	Root	Treatment of gonorrhoea
6	Fabaceae	<i>Senna alata</i> (L.) Roxb	Candle bush flower, ringworm bush, christmas candle	Ogalu	Leaf	Treatment of gonorrhoea
7	Fabaceae	<i>Tetrapleura tetraptera</i> (Schumm and Thon) Taub	Aridan	Osakirisa, Oshosho	Bark	Treatment of STDs
8	Fabaceae	<i>Baphia nitida</i> Lodd	African sandalwood, camwood	Okpulu ofia, ufie	Stem, bark and leaf	Treatment of STDs
9	Fabaceae	<i>Azelia africana</i> Sm.	Lenke, lague	Akparata	Root	Decoction of root is used for the treatment of gonorrhoea
10	Rutaceae	<i>Citrus aurantifolia</i> (Christm) Swingle	Lime tree	Epe nkirisi, oroma nkirisi	Leaf and fruit	Treatment of STDs
11	Rutaceae	<i>Citrus paradisi</i> Macfad	Grape fruit tree	Oroma ilu	Fruit and leaf	Treatment of gonorrhoea and trichomoniasis
12	Rutaceae	<i>Zanthoxylum xanthoxyloides</i> (Lam) Zepern and Timler	Alter root	Ubube, ubebo	Bark and root	Treatment of STDs
13	Asteraceae	<i>Aspilia africana</i> (Pers) C. D. Adams	Haemorrhage plant, wild sunflower	Oranjila, Orama-ejula	Leaf	Treatment of syphilis
14	Asteraceae	<i>Ageratum conyzoides</i> L.	Goat weed	Agadi-isi-awo-ocha	Leaf	Treatment of gonorrhoea, inhibits HIV replication.
15	Asteraceae	<i>Verononia colorata</i> (Wild) Drake	Bitter leaf	Olugbu	Leaf and root	Treatment of gonorrhoea
16	Malvaceae	<i>Sida cordifolia</i> L.,	Flannel weed, heart-leaf sida	Akwukwo-nwaosi, niaika	Leaf and root	Treatment of gonorrhoea
17	Malvaceae	<i>Abelmoschus esculentus</i> (L.) Moench	Okra	Okwuru	Fruit and seed	Treatment of gonorrhoea
18	Malvaceae	<i>Ceiba petandra</i> L.	Kapok	Akpu ogwu	Leaf and bark	Treatment of gonorrhoea
19	Cucurbitaceae	<i>Curcubita maxima</i> Duchesne	Squash gourd	Ugbogulu	Seed and pericarp	Treatment of STDs
20	Cucurbitaceae	<i>Trichosanthes cucumerina</i> L.	Snake guord, serpent gourd	Elile agwo	Aerial part	Prevents the replications of HIV
21	Moraceae	<i>Ficus exasperata</i> Vahl	Sand paper fig, brachma's Banyan	Anwerenwa	Leaf and bark	Treatment of gonorrhoea
22	Moraceae	<i>Ficus capensis</i> Thumb	Wild fig tree	Ikoro	Leaf, stem	Treatment of gonorrhoea
23	Amaryllidaceae	<i>Allium sativum</i> L.	Garlic	Ayuu	Bulb	Treatment of syphilis, gonorrhoea and trichomoniasis
24	Amaryllidaceae	<i>Allium cepa</i> L.	Onion	Yabasi	Bulb (leaf)	Treatment of gonorrhoea
25	Poeaceae	<i>Cymbopogon citratus</i> (DC) Stapf	Lemon grass	Achara ehi	Leaf	Boiled leaves are used as tea to treat oral thrush in HIV patients.
26	Poeaceae	<i>Bambusa vulgaris</i> Schrad. ex. J. C. Wendl	Common bamboo, golden bamboo	Mkpara achara	Leaf	Treatment of gonorrhoea
27	Loganiaceae	<i>Anthocleista djalonensis</i> A. Chev.	Cabbage tree	Ute agu, Okpokolo	Leaf, bark, and root	Treatment of STDs
28	Loganiaceae	<i>Spigelia anthelmia</i> Linn	Pink root, worm plant	Ijikara	Aerial plat	Suppresses the replication of HIV.
29	Moringaceae	<i>Moringa oleifera</i> Lam	Horseradish tree	Okwe-bekee, Okwe-oyibo	Root	Treatment of STDs
30	Solanaceae	<i>Schwenkia americana</i> Linn	Mullein	Ayadibia	Aerial part	Treatment of STDs
31	Sterculiaceae	<i>Sterculia tragacantha</i> Linn	Alawefon	Nkpuruamu-nwaebule, Oloko	Stem bark	Treatment of syphilis
32	Leguminosae	<i>Henna podocarpa</i> (Guill and Perr)	Senna	Ogaalu, Ogaala	Aerial part	Treatment of STDs
33	Piperaceae	<i>Piper guineense</i> Schum	African black pepper, bush pepper	Uziza	Root	Treatment of gonorrhoea and syphilis
34	Anacardiaceae	<i>Spondia mombin</i> Linn	Yellow mombin hog plum	Ijikere	Leaf	Infusion of leaves is used for the treatment of gonorrhoea

35	Cactaceae	<i>Opuntia dillenii</i> Haw	Prickly pear	Ogwu-ogwu	Fruit	Fruit is used for the treatment of gonorrhoea
36	Connaraceae	<i>Byrococarpus coccineus</i> Schumach	Huntsman's pepper	Ogwu agbuaka	Leaf	Treatment of gonorrhoea and other STDs
37	Mimosoideae	<i>Pentaclethra macrophylla</i> Benth	Oil bean tree	Ugba, Ukpaka	Bark	Treatment of gonorrhoea
38	Scrophulariaceae	<i>Scoparia dulcis</i> Linn	Goat weed, sweet broom	Aiya	Leaf and root	Treatment of gonorrhoea
39	Verbanaceae	<i>Stachyterpetha cayaennensis</i> (Rich.) Vahl	Nettle-leaf, blue snakeweed, rattail	Ogwu ogwa	Aerial part	Treatment of gonorrhoea
40	Clusiaceae	<i>Garcinia cola</i> Heckel	African wonder nut, bitter kola	Akuilu	Seed	Gum from seed is taken for the treatment of gonorrhoea
41	Caesalpiniaceae	<i>Anthonotha macrophylla</i> P. Beauv	African rosewood	Ububa-ikpa	Bark	Treatment of gonorrhoea
42	Liliaceae	<i>Aloe barteri</i> Miller	Aloe vera	Alo	Leaf	Boiled plant is used for the treatment of gonorrhoea and syphilis
43	Zingiberaceae	<i>Zingiber officinale</i> Roscoe	Ginger	Jinja	Stem	Treatment of STDs
44	Colchiaceae	<i>Gloriosa superba</i> L	Flame lily, creeping lily	Okpa ekele	Aerial part	Treatment of gonorrhoea
45	Labiataeae	<i>Gmelina arborea</i> Roxb	Beech wood, Gmelina	Melaina	Root and bark	Treatment of gonorrhoea
46	Meliaceae	<i>Azadirachta indica</i> A. Juss	Neem	Dogonyaro	Leaf and bark	Treatment of gonorrhoea
47	Caricaceae	<i>Carica papaya</i> Linn	Pawpaw	Okwuru-bekee	Root and bark	Infusion from root and bark is used for the treatment of gonorrhoea and syphilis
48	Plantaginaceae	<i>Plantago major</i> (LINN)	Plantain	Ojoko, ogede-ojoko	Fruit	Used as tea for the treatment of syphilis
49	Brassicaceae	<i>Brassica oleracea</i> L.	Wild cabbage	Ube	Leaf	Treatment of STDs in women
50	Polygonaceae	<i>Polygonum hydropiper</i> LINN.	Smart weed	Uda	Aerial part	Treatment of STDs
51	Bignoniaceae	<i>Newbouldii leavis</i> (P. Beauv)	African border tree, Akoko tree	Ogiliisi	Leaf	Treatment of syphilis
52	Agavaceae	<i>Dracaena mammi</i> Bak	Soap tree	Olokoro modu	Root	Decoction of root is used in the treatment of gonorrhoea
53	Vitaceae	<i>Ciccus populnea</i> Guill and Perr	Food gum	Okoho	Stem bark	Treatment of gonorrhoea
54	Padiaceae	<i>Sesamun radiatum</i> Schum and Thonn	Black sesame, vegetable sesame	Agbala	Leaf	Treatment of gonorrhoea
55	Lythraceae	<i>Lawsonia inermis</i> L.	Henna tree, hina	Anya nwona	Leaf and bark	Treatment of gonorrhoea
56	Acanthaceae	<i>Acanthus montanus</i> (Nees) T. Anderson	Bear's breech, mountain thistle	Agameebu	Root	Treatment of syphilis
57	Nyctaginaceae	<i>Boerhaavia diffusa</i> Linn	Hog weed	Anyado-akwa	Aerial part	Treatment of gonorrhoea
58	Rubiaceae	<i>Borreria verticiliata</i> (L.) Meyer	Shrubby false button weed, shrubby false button wood	Atara	Aerial part	Treatment of gonorrhoea
59	Combretaceae	<i>Terminalia catappa</i> Linn	Almond	Ukwu- frutu	Bark	Treatment of gonorrhoea
60	Apocynaceae	<i>Alstonoa boneii</i> De Wild	Stool wood, pattern wood	Eghu	Bark	Treatment of gonorrhoea
61	Iringiaceae	<i>Klainedoxa gabonensis</i> Pierre ex Engl	Kroma,	Odudu	Stem and bark	Treatment of STDs
62	Amaranthaceae	<i>Amaranthus spinosus</i> Linn	African spinach, green	Inine ogwu	Root	Treatment of STDs

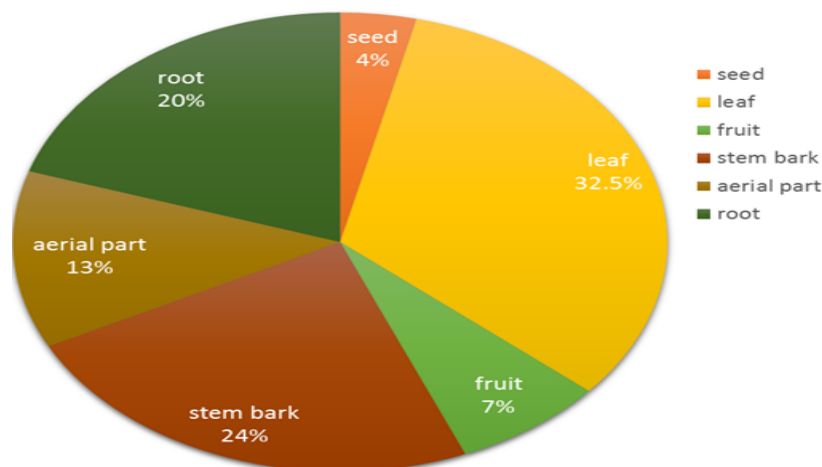


Fig-2. A pie chart showing the percentage of plant parts used.

#### 4. DISCUSSION

Result from this investigation shows that different traditional herbal practitioners use different plant species for the treatment of various sexually transmitted diseases and therefore the knowledge of the therapeutic value of the plant species, disease conditions, differ from one practitioner to another.

The survey shows that Euphorbiaceae, Fabaceae, Asteraceae, Rutaceae and Malvaceae were the plant families mostly used in the treatment of sexually transmitted diseases (Table 1). These plant families are among the most common plant families seen in Nigeria [10, 11]. In the study conducted among the people of Zegie peninsula in Ethiopia, it was shown that Euphorbiaceae was among the families that produced the highest number of medicinal plants out of the 44 families reviewed [12].

Several plants have been reported by other researchers for the treatment of sexually transmitted diseases and they fall within the inventory of this study. Such plants which have been discovered to be involved in the treatment of gonorrhea include *Scorpariadelphicis*, [13]. *Stachytarpheta cayensis* [14], *Spondia mombin*, *Afzelia Africana* [15], *Ageratum conyzoides* [16]. Other plants have been found useful in the treatment of syphilis which include *Mangifera indica* [17] while *Ageratum conyzoides* have been found helpful in the management of HIV [18].

It can be depicted from this finding that these plants probably possess some phytochemicals and metabolites for the treatment of these conditions though the active chemical compounds and their mode of operation from this survey is unknown. Notable chemical and phytochemical works have been done on some of the plants investigated and include *Garcinia cola* [19-24]. *Zingiber officinale* [25-28], *Nauclea latifolia* [29], *Berberis* species [30], *Carica papaya* [31, 32], *Ocimum gratissimum* [33-35], *Tetroleura tetraoptera* [33, 35], *Populus tremula* [36].

The plants investigated can be viewed as potential sources for active drugs and hence should be explored for pharmaceutical and therapeutic purposes.

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