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Checklist of medicinal plants used by traditional women for maternal health care in Lagos State, Nigeria

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ABSTRACT

Traditional women in Lagos State, Southwest, Nigeria have been using medicinal plants for maternal health care since time immemorial. However, there is no proper documentation of medicinal plants used in maternal health care, as information is passed from generation to generation orally. This study aimed at the identification and documentation of medicinal plants used in Lagos, Nigeria for maternal health care. Ethnobotanical studies were carried out in six local government areas namely, Agege, Alimosho, Badagry, Ejiogbo, Mushin and Ojo. A Semi-structured questionnaire was designed to obtain information from 300 respondents, 50 from each local government area. The respondents included herbal merchants, herbal medicine practitioners, midwives, and traditional birth attendants. Information obtained included the names of the plants, plant parts used, mode of preparation and administration and dosage of the medicinal herbs. Forty-five (45) plants belonging to twenty-three (23) families were identified and documented in the study area. Most of the reported plants belong to the Fabaceae (13.52%), Malvaceae (8.41%) and Annonaceae (6.67%) families. *Kigelia africana*, *Caliandra portoricensis*, *Nauclea latifolia* and *Securidata longepedunculata* had the highest Relative Frequency of Citation (RFC) and Fidelity Level (FL) of 0.96; 100% and 0.82; 100%, 0.92; 100% and 0.78; 100% respectively. Most of the reported plants (73.47%) were herbs and shrubs and about 62.68% of the surveyed plants were wild. Leaves were the most frequently used (72.74%) plant's part. Most of the herbs (80.45%) were prepared as decoctions and preparations were mostly administered orally (88.64%). Strategies suggested to conserve the surveyed plants include the cultivation of medicinal plants to prevent their extinction.

KEYWORDS: Medicinal Plants, Maternal Health Care, Lagos State, Nigeria

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INTRODUCTION

Maternal healthcare is the well-being of a woman during pregnancy, childbirth, and the postpartum period. It involves the health of a woman during family planning, preconception, prenatal and postnatal care to reduce maternal morbidity and child mortality. Lack of proper maternal health care is one of the leading causes of mother and child mortality.

Maternal health is a critical component of public health in Nigeria, as it directly impacts the well-being of women and children (Adibe, 2009). Maternal mortality remains a significant concern in the country, with various factors contributing to this alarming statistic, including limited access to quality healthcare, socio-economic disparities, and cultural practices (Adediwura & Arowojolu, 2019).

The utilization of medicinal plants for maternal health care has emerged as a noteworthy and traditional approach to address some of the challenges of maternal health disorders

(Kankara *et al.*, 2015). Medicinal plants have been an integral part of Nigeria's cultural heritage for centuries, and they offer a unique and potentially effective avenue to enhance maternal health outcomes (Oreagba *et al.*, 2011).

In a number of developing countries, complications during pregnancy and childbirth are the leading causes of death among women of reproductive age. It is approximated that a woman dies from complications from childbirth every minute (WHO, 2017). Most maternal deaths and injuries are caused by biological processes such as postpartum haemorrhaging and not from disease (WHO, 2005). Each year, half a million women die during childbirth or from complications during pregnancy, and 99% of maternal and newborn mortality occurs in developing countries. Of these deaths, 80% are caused by direct obstetric causes such as haemorrhage, infection, hypertensive disorders of pregnancy, and complications of unsafe abortion (UNICEF, 2009).

Nigeria's vast biodiversity, favorable climate, and rich traditional knowledge systems have contributed to a diverse

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array of medicinal plants that have been used for generations to support maternal health (Gruca & Blach-Overgaard, 2018). These plants offer a repertoire of bioactive compounds with potential therapeutic benefits, such as managing pregnancy-related complications, improving postpartum recovery, and promoting overall maternal well-being (Fakeye et al., 2009). Moreover, their accessibility and affordability make them a practical option, especially for women in rural and underserved areas with limited access to modern healthcare services (Fakeye et al., 2009).

This research explores the use of medicinal plants for maternal health care in Lagos State, Nigeria, shedding light on the cultural, ecological, and socio-economic dimensions of this practice. By delving into the historical and contemporary relevance of these plants in maternal healthcare, we aim to identify, document, and understand their potential as complementary and integrative resources alongside conventional medical interventions.

This exploration intends to stimulate further research and dialogue, emphasizing the importance of preserving indigenous knowledge of medicinal plants and harnessing their therapeutic potential in promoting maternal health in Nigeria.

METHODOLOGY

Study Area

Lagos State is a cosmopolitan city in South-West Nigeria. It is the commercial hub and the most populous city of the country with approximately 35 million people. It is bounded to the south by the Bight of Benin and to the west by the international border with Benin Republic. Lagos State borders Ogun State to the northeast and is the only Nigerian state that borders only one other state. It occupies a total area of 3,577 km² (1,381 sq mi) with a density of 2,500/km² (6,600/sq mi). Lagos State houses 20 local government areas. The study area included six local government areas of Lagos State namely, Agege, Alimosho, Badagry, Ejigbo, Mushin and Ojo (Figure 1).

Data Collections

Ethnobotanical studies were carried out in six local government areas namely, Agege, Alimosho, Badagry, Ejigbo, Mushin and Ojo between November 2020 and January 2021. A Semi-structured questionnaire was designed to obtain information from 300 respondents, 50 from each local government area. The respondents included herbal merchants, herbal medicine practitioners, midwives, and traditional birth attendants. Information obtained included the name of the plants, plant parts used, mode of preparation and administration and dosage of the medicinal herbs. The consent of all respondents was sought before administering the questionnaires.

Questionnaire

Semi-structured questionnaires were used for data collection. The first section of the questionnaire was used to obtain

information about the socio-demographic status of the respondents (age, level of education, marital status, language spoken, height, weight, place of residence, professional occupation, and income) (Table 1). The second section included questions about the medicinal plants used for maternal health before conception, during pregnancy, labour, delivery and postnatal (vernacular name of each species, mode of preparation and administration, period of use and reasons for use) (Table 2, Figures 2 & 3). The scientific names of the plant species were determined based on the list of plants presented by Burkill (1985). Validation of the concordance between the vernacular names and the botanical names was carried out at the University Herbarium, Department of Botany, Faculty of Science, Lagos State University, Ojo campus.

Statistical Analysis

Relative frequency of citation (RFC) and Fidelity Level (FL) were used to analyse the ethnobotanical data (Table 3).

$RFC = F_c/N$ (where F_c is the number of respondents who cited a particular species and N is the total number of respondents.)

$FL = N_s/N \times 100$ (where N_s is the frequency of citation of a particular species for a particular ailment and N is the total number of citations of that species.)

RESULTS

Some Herbal Recipes for Maternal Health Care in Lagos State, Nigeria

1. Before conception

(a) The following plants were mentioned to be used before conception.

Tetrapleura tetraptera, *Anthocleista djalonensis*, *Caliandra portoricensis*, *Dabergia Sxatilis*, *Spigelia anthelmia*, *Plumbago zeylanica*, *Securidata longepedunculata*, *Uvaria afzelli*, *Alstonia boonei*, *Cissampe lospereira*.

Mode of preparation: (Tincture) Cut plants into pieces and soak in 7up drink for three (3) days.

Dosage: Drink in the morning before eating (small quantity).

Table 1: Distribution of local informants in accordance with their age groups

Age Range	Sex	Level of Education			Total
		Illiterate	Semi illiterate	Educated	
31-40	Male	35	16	18	69
41-50	Female	50	26	17	93
51-60	Female	31	20	10	61
61-70	Female and Male	20	17	10	47
71 Above	Male and Female	13	10	7	30
Total		149	89	62	300

Table 2: List of Medicinal Plants used for Maternal Health Care in Six Local Government Areas of Lagos State, Nigeria

Botanical Names	Family Names	Local Names	Common Names	Habits	Plant parts	Indications
<i>Tetrapleura tetraptera</i>	Fabaceae	Aidan tooro	Gum Tree	Tree	Root	Cold, Infections, Immune booster
<i>Anthocleista djalonensis</i>	Loganiaceae	Sapo	Cabbage tree	Tree	Root	Constipation, Malaria and Typhoid, Fever during pregnancy
<i>Caliandra portoricensis</i>	Fabaceae	Tude	White stick pea	Shrub	Root	Fever, Breast Engorgement and Stomach disorders
<i>Dalbergia Sxatilis</i>	Fabaceae	Paran pupa	Flat bean	Shrub	Root	Cough, Skin Lesions and toothache
<i>Spigelia anthelmia</i>	Loganiaceae	Paran funfun	Worm weed	Shrub	Root	To treat nausea and vomiting
<i>Plumbago zeylanica</i>	Plumbaginaceae	Inabiri	Wild lead wort	Shrub	Root	For easy labour
<i>Securidata longepedunculata</i>	Polygalaceae	Ipeta	Violet tree	Tree	Root	To treat nausea And vomiting
<i>Cissampe Iospereira</i>	Menispermaceae	Gbejedi	Bastard vervain	Shrub	Root	To treat pile
<i>Uvaria afzelli</i>	Annonaceae	Gbogbonise	Finger root	Tree	Root	To treat infertility
<i>Alstonia boonei</i>	Annonaceae	Awogbarun	God's tree	Tree	Root	To treat fever during pregnancy
<i>Euphorbia lateriflora</i>	Euphorbiaceae	Enuopire	Coral plant	Shrub	Leaves	For conception
<i>Citrullus colocynthis</i>	Cucurbitaceae	Egusibaara	Bitter cucumber	Climber	Fruit	To treat infections
<i>Kigelia africana</i>	Bignoniaceae	Amuyon	Sausage tree	Tree	Bark	For easy delivery
<i>Curculigo Pilosa</i>	Hyoxidaceae	Epanikun	African crocus	Shrub	Fruit	To regulate weight of the pregnant woman
<i>Uvaria chamae</i>	Annonaceae	Eruju	Finger root	Tree	Root	Easy conception
<i>Casia alata</i>	Fabaceae	Asuwon	Candle bush	Herb	Leaves	Constipation.
<i>Carica papaya</i>	Caricaceae	Ibepe	Pawpaw	Tree	Fruit	Typhoid fever
<i>Enanatia chlorantha</i>	Annonaceae	Awopa	African yellow wood	Tree	Bark	Malaria
<i>Morinda lucida</i>	Rubiaceae	Oruwo	Brimstone tree	Tree	Root	Malaria and fever
<i>Urena lobata</i>	Malvaceae	Oke	Caesarweed	Weed	Bark	Easy delivery
<i>Staudtia stipitata</i>	Myristicaceae	Amuje	Abua	Tree	Bark	Anaemia
<i>Nauclea latifolia</i>	Rubiaceae	Egbesi	Pin cushion tree	Tree	Root	Malaria
<i>Cajanus cajan</i>	Fabaceae	Otili	Gungo peas	Shrub	Leaves	Easy labour
<i>Azadirachta indica</i>	Meliaceae	Dongoyaro	Neem tree	Tree	Leaves	Malaria and fever
<i>Alstonia congensis</i>	Apocynaceae	Ahun	Cheese wood	Tree	Bark	To treat jaundice and fever both in the mother and the child
<i>Acacia nilotica</i>	Fabaceae	Eso booni	Sodom apple	Tree	Fruit	To treat cold in newborn
<i>Mangifera indica</i>	Anacardiaceae	Mangoro	Mango	Tree	Bark	To treat malaria and fever during pregnancy
<i>Lawsonia inermis</i>	Lythraceae	Ewe laali	Henna	Shrub	Leaves	To treat skin rashes in newborn
<i>Curcuma longa</i>	Zingiberaceae	Ata ile pupa	Tumeric	Shrub	Fruits	To treat nausea and cold
<i>Syzygium aromaticum</i>	Myrataceae	Kanafuru	Clove	Tree	Fruit	To improve taste and appetite
<i>Abelmoschus esculentum</i>	Malvaceae	Ila	Okra	Shrub	Fruit	To induce labour, Widening of birth canal
<i>Corchorus olitorius</i>	Malvaceae	Ewedu	Jute	Herb	Leaves	To hasten child delivery
<i>Newbouldia laevis</i>	Bignoniaceae	Akoko	Fertility tree	Tree	Leaves and Bark	To hasten Conception, Treat ovulation disorder, Treat female genital infections
<i>Zingiber officinale</i>	Zingiberaceae	Ata-ile	Ginger	Herb	Rhizome	To treat nausea, vomiting and cold
<i>Eucalyptus globulus</i>	Myrtaceae		Fever tree	Tree	Leaves	To treat fever, cold and Inflammation
<i>Parkia biglobosa</i>	Fabaceae	Panseke	Locust- bean tree	Tree	Fruits/ Seeds	For general body wellness, To treat malaria, swollen feet, indigestion, and urinary tract infections
<i>Senna occidentalis</i>	Fabaceae	Igi sena	Ant bush	Shrub	Leaves	To ease labour, Treat waist pain and typhoid during pregnancy
<i>Sida acuta</i>	Malvaceae	Isekotu	Wireweed	Shrub	Leaves	To hasten conception, Treat abdominal pain and hemorrhoids
<i>Garcina cola</i>	Clusiaceae	Orogbo	Bitter cola	Tree	Seeds	To manage nausea and vomiting, To treat cough and sore throat during pregnancy
<i>Vernonia amygadlina</i>	Asteraceae	Ewuro	Bitter leaf	Shrub	Seeds	To improve food taste and appetite,. To treat constipation and bacterial infections
<i>Hibiscus sabdariffa L.</i>	Malvaceae	Zobo	Roselle	Shrub	Leaves	Induction of lactation after childbirth
<i>Allium cepa</i>	Amaryllidaceae	Alubosa	Onion	Herb	Bulb	Prevention of miscarriages, Vaginal itching, Prevention and treatment of genital infections
<i>Allium sativum</i>	Amaryllidaceae	Ayuu	Garlic	Herb	Cloves	Urinary burns Pain Uterine involution Cold
<i>Artemisia annua</i>	Asteraceae	Ewe-Egbin	Wormwood	Herb	Leaves	Malaria, Fever and Infections
<i>Calotropis procera</i>	Apocynaceae	Bomubomu	Sodom Apple	Shrub	Juice	To induce labour and lactation



Figure 1: Map of Lagos State showing the study area

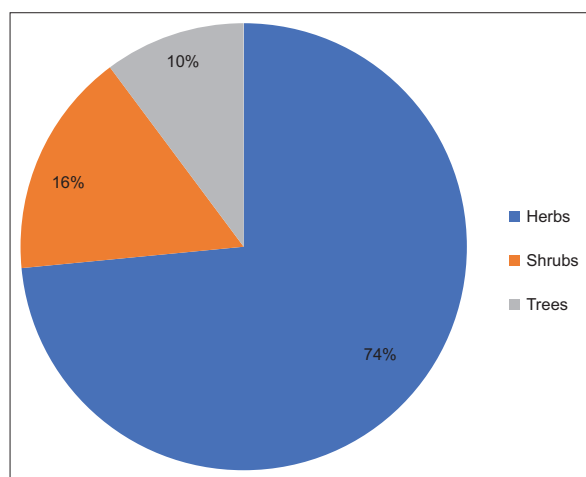


Figure 2: Habits of the medicinal plants used in the study area

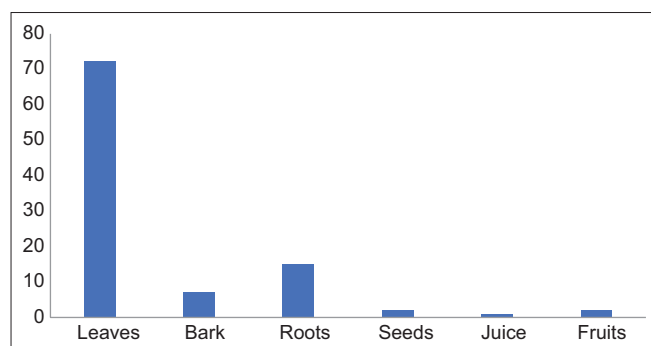


Figure 3: Plant parts distributions of the medicinal plants used in the study area

(b) For infections: *Euphobia lateriflora* and *Strophantus hispidus*

Mode of preparation: (Maceration) Cut plants into pieces and mix with cold water.

Dosage: 4 teaspoon morning and evening.

(c) The following plants were mentioned to be used before conception; *Citullus colocynthis*, *chrysophyllum delevoiy*, *Uvaria afzelli*, *Caliandra portoricensis*, *Securidata longepedunculata*, *Treculia Africana*, *Curculigo pilosa*, *Anthocleista djalonensis*, *Kigelia Africana*, *Uvaria chamae*, potash (small portion), White salt, *Casia alata*.

Mode of preparation: (Decoction) Cut plants into smaller pieces and cook in water, then add the potash and white salt after cooking.

Dosage: Drink a cup in the morning

2. During pregnancy

(a) For baby jaundice: The following plants were mentioned to be used during pregnancy.

Unripe *Carica papaya*, *Allium sativum* (8 pieces), *Enantia chlorantha*.

Mode of preparation: (Maceration) Peel the back of the unripe pawpaw and cut into smaller pieces, peel the garlic, and add to it, cut the *E. chlorantha* into smaller pieces and pour pap water on it and soak for two (2) to three (3) days.

Dosage: Drink morning, afternoon, and night

Sorghum bicolor, *Theobroma cacao*, and potash.

Mode of preparation: (Decoction) Cook with water and add two (2) cubes of sugar.

Dosage: pour inside a cup and add a tin of milk, to be taken once a day.

Table 3: Relative Frequency of Citation and Fidelity Level of the Medicinal Plants

Botanical Names	RFC	FL (%)
<i>Abelmoschus esculentum</i>	0.41	36.29
<i>Acacia nilotica</i>	0.62	55.68
<i>Allium cepa</i>	0.67	50.25
<i>Allium sativum</i>	0.58	56
<i>Artemisia annua</i>	0.25	47.3
<i>Alstonia boonei</i>	0.38	30.97
<i>Alstonia congensis</i>	0.32	37.11
<i>Anthocleista djalonenis</i>	0.71	92.49
<i>Azadirachta indica</i>	0.82	82.45
<i>Cajanus cajan</i>	0.72	63.13
<i>Calliandra portoricensis</i>	0.82	100
<i>Calotropis procera</i>	0.29	42.53
<i>Carica papaya</i>	0.89	95.13
<i>Casia alata</i>	0.44	40.91
<i>Cissamppe lospereira</i>	0.3	51.69
<i>Citrullus colocynthis</i>	0.19	59.65
<i>Corchorus olitorius</i>	0.26	85.9
<i>Curculigo pilosa</i>	0.33	30.61
<i>Curcuma longa</i>	0.22	40.3
<i>Dalbergia Sxatilis</i>	0.58	48.85
<i>Enantia chlorantha</i>	0.36	41.67
<i>Eucalyptus globulus</i>	0.29	54.02
<i>Euphorbia lateriflora</i>	0.71	57.55
<i>Garcinia kola</i>	0.36	39.45
<i>Hibiscus sabbdariffa L.</i>	0.42	25.2
<i>Kigelia africana</i>	0.96	100
<i>Lawsonia inermis</i>	0.28	67.86
<i>Mangifera indica</i>	0.66	55.33
<i>Morinda lucida</i>	0.67	43.28
<i>Nauclea latifolia</i>	0.92	100
<i>Newbouldia laevis</i>	0.62	39.46
<i>Parkia biglobosa</i>	0.72	66.51
<i>Plumbago zeylanica</i>	0.52	53.5
<i>Securidata longepedunculata</i>	0.78	100
<i>Senna occidentalis</i>	0.25	50
<i>Sida acuta</i>	0.19	43.86
<i>Spigelia anthelmia</i>	0.52	56.69
<i>Staudtia stipitata</i>	0.7	45.97
<i>Syzgium aromaticum</i>	0.51	49.67
<i>Tetrapleura tetraptera</i>	0.78	88.89
<i>Urena lobata</i>	0.77	62.77
<i>Uvaria afzelli</i>	0.93	100
<i>Uvaria chamae</i>	0.81	72.02
<i>Vernonia amygdalina</i>	0.31	25.53
<i>Zingiber officinale</i>	0.29	65.52

(b) For Malaria

Nauclea latifolia, *Alstonia congensi*, *Garcinia kola*, *Mangifera indica* *Staudtia stipitata*, *Urena lobata*, *Morinda lucida*, *Cajanus cajan*, *Lawsonia inermis*, *Azadirachta indic.*

Mode of preparation: (Decoction) Cut into smaller pieces and cook with water.

Dosage: Drink with a small cup after eating.

3. During delivery

The following plants were mentioned to be used during delivery; *Erythrophleum suaveolens* and *Aframomum melegueta* (5 seeds).

Mode of preparation: (Infusion) Grind the leaf of *Erythrophleum suaveolens* with the seeds of *Aframomum melegueta* and pour inside warm water.

Dosage: A cup should be taken.

4. After delivery

The following plants were mentioned to be used after delivery.

Zingiber officinale, *Croton lobatus* and *Erythrococca anomala*

Mode of preparation: (Tincture) Grind whole plants together and soak inside alcohol.

Dosage: 3 Teaspoons to be taken on empty stomach.

DISCUSSION

Medicinal plants play a crucial role in maternal health care in Nigeria. Throughout history, Nigerian women have relied on the healing properties of these plants to support their well-being during pregnancy, childbirth, and postpartum recovery. The rich biodiversity of Nigeria has blessed the country with a diverse array of medicinal plants, each with unique therapeutic properties.

By harnessing the power of these plants, Nigerian women have been able to address various health concerns, such as anemia, hypertension, postpartum hemorrhage, and lactation difficulties. These natural remedies have been passed down through generations, preserving traditional knowledge and empowering women to take charge of their health.

Moreover, medicinal plants offer several advantages for maternal health care in Nigeria. They are often more affordable and accessible than modern pharmaceuticals, particularly in remote areas where healthcare infrastructure may be limited. Additionally, the use of medicinal plants aligns with the cultural and traditional beliefs of Nigerian communities, fostering a sense of familiarity and trust in the healing process.

Incorporating medicinal plants into the existing maternal healthcare system in Nigeria can yield significant benefits, including improved health outcomes, cost-effective solutions, and cultural preservation. It is crucial for healthcare providers, policymakers, and researchers to collaborate in order to integrate traditional knowledge with modern evidence-based medicine, ultimately ensuring the well-being of Nigerian women during this critical phase of their lives.

However, it is important to acknowledge the need for further research and scientific validation of the efficacy and safety of these medicinal plants. While traditional practices have provided valuable insights, modern medical advancements can help validate their use and ensure standardized dosage and administration guidelines.

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