

## Medicinal Plants used in Traditional Maternal Health Care Delivery in Five Selected Villages of Zango Kataf Local Government Area of Kaduna State, Nigeria

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### ABSTRACT

The health of the mother determines the health of the child; indigenous methods and materials have been used since ages in maternal health care both before and after the delivery. The present study is an attempt to document the use of plants use for maternal health care. The study analyzes the salience of plants used, the associated practices and reasons of such practices by pregnant women in five selected villages in Zango Kataf local Area of Kaduna state, Nigeria. 25 key informants were selected based on recognition by the village heads (five from each village) and information on therapeutic plants were gathered by semi structured questionnaire. Thematic analysis was employed to undertake the qualitative analysis. There were only 12 species of plants belonging to 10 families 12 genera and 9 order that have been recorded in this study which includes: *Sida acuta*, *Tamarindus indica*, *Moringa oleifera*, *Jatropha curcas*, *Ficus polita*, *Azadirachta indica*, *Acacia nilotica*, *Mangifera indica*, *Hibiscus sabdariffa*, *Zingiber officinale*, *Verninia amygdalina* and *Calotropis procera*. Most of the plants are set up as juice from fresh plant parts. The majority of the cures are set up from single plant species and taken orally. A large portion of the therapeutic plants are wild plants. This study is important to preserve the knowledge of medicinal plants for maternal health care used by indigenous people. The

outcomes obtained in the study are worth being further investigated for conservation strategies and for proof scientifically.

**Key words;** traditional medicine, maternal, pregnancy, healthcare

### INTRODUCTION

Medicinal plants occupy a distinct place in the life of human, right from the primitive till today. Use of plants as a source of medicine has been inherited and is an important component of health care system in Nigeria. <sup>[1]</sup> Nigeria has a long history of medicinal heritage. Medicinal plants are widely used by all sections of the population either directly as folk remedies or indirectly in the preparation of modern pharmaceuticals. Nigeria is endowed with a rich wealth of medicinal plants; microbes are closely associated with the health and welfare of human beings. Plants produce a diverse extent of bioactive molecules, making them wealthy source of various types of medications. Most of the drugs today are obtained from natural sources or semi synthetic derivatives of natural products and used in the traditional systems of medicine. <sup>[2]</sup>

Maternal healthcare can be defined as the health of a woman during pregnancy, childbirth, and the postpartum period. It includes family planning, preconception, prenatal and postnatal care in order to reduce maternal morbidity and mother and child mortality and Pregnancy is a condition

associated with immense physiological alterations resulting in many pregnancy-related problems, including nausea, vomiting, constipation, and heartburn.<sup>[4]</sup> These ailments usually result in pregnant women self-medicating.<sup>[3]</sup> Plants continue to play a significant role as medicine during pregnancy, birth, and postpartum care in many rural areas of the world. In addition to this, plants have been used for centuries to treat infertility and related reproduction problems. The prevalence of the herbal medicines use is on the rise across the world, especially amongst pregnant women.<sup>[4]</sup>

The health of a mother and to be born child is determined by the kind of maternal healthcare both at pre- and post-delivery. 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.<sup>[5]</sup> Most maternal deaths and injuries are caused by biological processes such as postpartum haemorrhaging and not from disease. Each year, half a million women die during childbirth or from complications during pregnancy, and 99% of maternal and new born 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.<sup>[5-7]</sup>

It is estimated that 85% of the population in developing countries depend mainly on traditional healthcare systems.<sup>[8]</sup> In the African context, traditional medicine still plays an important role in pregnancy and labor even after the introduction of Western oriented medicine. In Africa the use of traditional medicine for the treatment of different illnesses and this includes pregnant women, Contributing factors to high use of traditional medicines include poverty, inaccessibility of health facilities, not being able to afford Western services and acceptability of traditional medicine as

part of African culture.<sup>[9]</sup> Several studies conducted in Sub-Saharan Africa indicated that the use of traditional herbal medicine in pregnancy is common. In Nigeria, a study by Tamuno et al reported that 31,4 % of women use herbal medicine in pregnancy.<sup>[9]</sup> A study by Fakaye et al reported a higher prevalence at 43%, but a study by Gharoro et al reported a lower prevalence, at 10%. The two earlier studies acknowledged the common use of traditional medicine in pregnancy and emphasized the need for health care professionals to educate pregnant women on the dangers of the use of traditional medicine in pregnancy.<sup>[9]</sup> The majority of Nigerians in the rural areas at some stage in their life turn to traditional healthcare as a result of accessibility, availability, affordability and inherent trust in this method. During pregnancy and childbirth traditional medicine relies on the use of certain herbs for their beneficial effects to tone the uterus muscle, induce labor, in the removal of retained placenta and management of postpartum bleeding.<sup>[10,11]</sup> The state of maternal health in Nigeria is poor and can be attributed to inadequate access to reproductive health services, poverty and in some areas cultural resistance that affects in particular women of rural areas with low access to primary healthcare. For instance, in the year 2000 the maternal mortality in Nigeria was estimated to approximately 1%.<sup>[8,12,13]</sup> Nigeria is one of 6 countries which together account for nearly half (49%) of all maternal deaths worldwide.<sup>[12]</sup> Documentation and standardization of medical plants and their correct use will improve reproductive health of local populations in Nigeria.<sup>[8,10]</sup>

This paper aims to document plants used for maternal health care and its related issues guided by ethnomedical knowledge of the Zango kataf dwellers. To the best of our knowledge, no previous ethnomedical study had been conducted specifically for maternal health care from this community. The new information gained from this study might initiate further studies to aim at

exploring the potentials of the plants, supporting the sustainability of traditional herbal medicine in local community, and conserving plants diversity.

## MATERIALS AND METHODS

### Study Area

The study took place in five villages (Fadan kasa, Mabushi, Tagama, Samaru and Jankasa) of Zango Kataf Local Government Area of Kaduna State, Nigeria. Zango Kataf is situated in the southern part of Kaduna state, and the people of Zango Kataf are mainly farmers and traders. The area is inhabited by the Atyap (Kataf), Bajju, and few Hausa and Fulani settlers who engage in trading and cattle rearing respectively. The rainy season is from March to October. Zango Kataf has an area of 2,66km<sup>2</sup> and a population of 316,370 at the 2006 census [14]

### Ethical Authorizations.

In each and every village seeking for authorization started with familiarly visit to the head of the village.

### Data collection

Information was obtained from the traditional healers using a semi-structured questionnaire. The survey was carried out from January to April 2014, after their informed consent. Some of the Questions asked are (i) the traditional healer or herbalist identity (name and surname, sex, age, religion, marital status and educational level), (ii) knowledge origin, (iii) the plants use for maternal health from early pregnancy, labor, child birth and taking care of the new born including the plants` local name, parts used, preparation method, administration and dosage, selection criteria were also grounded on (i) their respect as local practitioners by the society, (ii) their capacity to recognize plants and elucidate the uses, and (iii) the endorsement by village heads. 25 key informants selected five from each village as shown in Table 6-8. Every informant has immense knowledge in the areas of customary practices, herbal formulations, field identification, and collection of medicinal plants.

### Plant identification

Plant samples were collected following the standard guidelines with consideration to the conservation of the species. [15] Triplicates of each Herbarium specimens were pressed, oven-dried at 40°C for two weeks, and mounted on Herbarium sheets, which were then deposited at Usmanu Danfodiyo University Sokoto, Herbarium Collection for future references. Other standard data such as location, vegetation, habitat description, other medicinal plants present, and local plant name were recorded.

## RESULTS AND DISCUSSION

Herbal medicines, which include herbs, herbal preparations and herbal products, are the most widespread of traditional medicines and women they are the most frequent users. [13] Herbal medicines are used by women to treat a number of reproductive health problems, such as menstrual problems, infertility, discomforts and dysfunctions of pregnancy, labor and menopause. [16] Women's reproductive health problems are mostly functional disorders (e.g. dysregulation of cyclical events, adjustment of physiological events to pregnancy, adjustments to cyclical events at perimenopause), rather than infectious or surgical emergencies for which most Western modern medicines have been developed. This could explain why problems in women's reproductive health may be more amenable to treatment with herbal medicines. Many pregnant women also consider herbs to be generally milder and safer than pharmaceutical drugs. [9]

The 25 key informants 20 (80%) were males and 5 (20%) females, with ages ranging between 45 and 82 years, they are all married except the 2 widows, according to their beliefs 40% were Christians, 36% animism, 16% traditional and 8% not following any religion. While in the source of their knowledge those who gained their knowledge from parents and family members has 32% each, friends and community 24%, spouse 8% and neighbor 4%. On the other hand, in practice duration

those ranges between 10-25 years constitute the 28%, teenage age 20%, since young 40% since marriage 4% long period 4% and those that can predict the period of practice also 4%. In level of education 96% claimed to pass through primary school and 4% did not attend any. Finally, in occupation 24% are herbalist, trading and farming also 24%, farming 20%, herbalist and house wife 8%, while retiree, company worker, civil servant and trading 4% each. Although they were not regarded as the local experts or herbalists, they were the traditional herbal

medicine practitioners that would genuinely describe the plants they were very familiar with to the researcher. Additionally, the main advantage of employing the snowball sampling method was that the subsequent key informants were introduced to the researcher based on acknowledgement by their own tribe. Thus, in this study, characteristics such as age, gender, marital status, belief, and education level did not influence the acquisition of their ethnomedical knowledge of plants.

### Profiles of key informants from the selected villages

**Table 1: Profiles of respondents selected in Fadan kaje**

Code	Sex	Age	Marital status	Religion	Source of Knowledge	practice Duration	Level of Education	Occupation
R1	M	48	Married	Christianity	Parents	25 years	Primary school	Herbalist
R2	F	48	Widow	Animism	Friends & community	15 years	Primary school	Herbalist
R3	M	63	Married	Animism	Friends & community	At teenage age	Primary school	Farming/ herbalist
R4	M	70	Married	Animism	Family	Since young	Primary school	Trading
R5	M	50	Married	Traditional	Family	Since young	-	Farming/ Trading

**Table 2: Profiles of respondents selected in Mabushi**

Code	Sex	Age	Marital status	Religion	Source of Knowledge	practice Duration	Level of Education	Occupation
R1	M	56	Married	-	Neighbor	10 years	Primary school	Herbalist
R2	F	48	Married	Animism	Husband	23 years	Primary school	Herbalist/ Housewife
R3	M	72	Married	Traditional	Friends & community	At teenage age	Primary school	Retiree
R4	M	80	Married	Animism	Parents	Since young	Primary school	Farming
R5	M	70	Married	Christianity	Family	Since young	Primary school	Farming

**Table 3: Profiles of respondents selected in Tagama**

Code	Sex	Age	Marital status	Religion	Source of Knowledge	practice Duration	Level of Education	Occupation
R1	M	50	Married	Christianity	Parents	Since young	Primary school	Civil Servant
R2	M	59	Married	Christianity	Friends & community	-	Primary school	Herbalist
R3	M	55	Married	Christianity	Parents	At teenage age	Primary school	Farming
R4	M	79	Married	Animism	Family	Since young	Primary school	Herbalist
R5	M	90	Married	Traditional	Family	Long period	Primary school	Farming

**Table 4: Profiles of respondents selected in Samaru**

Code	Sex	Age	Marital status	Religion	Source of Knowledge	practice Duration	Level of Education	Occupation
R1	F	45	Married	Christianity	Parents	21 years	Primary school	Herbalist/house wife
R2	M	59	Married	Christianity	Friends & community	Teenage age	Primary school	Herbalist
R3	F	60	Widow	Animism	Husband	Since marriage	Primary school	House wife
R4	M	50	Married	Traditional	Family members	Since young	Primary school	Farming
R5	M	66	Married	Christianity	Family	Since young	Primary school	Trading/farming

**Table 5: Profiles of respondents selected in Jankasa**

Code	Sex	Age	Marital status	Religion	Source of Knowledge	practice Duration	Level of Education	Occupation
R1	M	45	Married	Christianity	Parents	11 years	Primary school	Company worker
R2	M	69	Married	Christianity	Friend	16 years	Primary school	Farming
R3	M	75	Married	Animism	Father	At teenage age	Primary school	Trading/farming
R4	M	82	Married	Animism	Parents	Since young	Primary school	Herbalist
R5	F	50	Married	Christianity	Family	Since young	Primary school	House wife

**Table 6: Medicinal Plants Used During Antenatal Period**

	Plants species used	Family	Local Name	Part(s) used	Preparation and application method	Purpose
a.	<i>Jatropha curcas</i>	Euphorbiaceae	Chini da zugu	Roots	Roots are cut into smaller pieces, and soak in water. A little quantity of red potash is added and allowed to stay, for 1 day, the mixture is taken twice a day (morning and evening). This application is done when the pregnancy is 6months old.	To provide strength and easy labour for the mother. Also to improve the health of the child and protection against infections.
b.	<i>Moringa oleifera</i>	Moringaceae	Zogale	Leaves, Pods, seeds, and flowers	Eating leaves raw, Grinding the pods, seeds or flowers after drying them	Serves as antibiotics and helps to reduce the blood pressure. Relieve headaches, treats gastric ulcer, encourages urination, treating malnutrition
c.	<i>Tamarindus indica</i>	Fabaceae	Tsamia	Pulp	The pulp is removed from the pod and used with water few days or weeks to delivery. The immature green pod can be eaten directly.	It helps in reducing the sugar content for easy labour.
d.	<i>Sida acuta</i>	Malvaceae	Miyar tsanya	Leaves, Roots.	Decoction and leaf juice is used in, leaf juice is given for Root decoration is used for	treatment of malaria fever, vomiting gastric disorders Relieve in chest pain, breathing problem and tuberculosis
e	<i>Zingiber officinale</i>	Zingiberaceae	Citta	Rhizome	Make juice with the fresh rhizome or boil the dried one and be taken orally	Relieve from common cold, prevent vomiting and serves as antibiotics

**Table 7: Medicinal plants to hasten labor**

	Plant species used	Family	Local Name	Part(s) used	Preparation and application method	Purpose
a.	<i>Sida acuta</i>	Malvaceae	Miyar tsanya	Leaves	Two weeks to delivery, the leaves are thoroughly and properly washed and are directly chewed.	The slippery nature of the leave help to hasten and makes labor easier.
b	<i>Calotropis procera</i>	Asclepiadaceae	Tunfafiya	Bark	Dried bark is mix with water and to be taken orally	It is believe that, the more the expectant drink the decoction easier is her labor
c	<i>Mangifera indica</i>	Anacardaceae	Zogale	Bark	Fresh bark is soak in water and taken orally immediately when there is sign of labor	It precipitate the discharge caused by the release of a mucous plug that blocks the cervix (the opening to the uterus)
d	<i>Hibiscus sabdariffa</i>	Malvaceae	Soborodo (white and red)	Flower	The flowers are either soak in water or boil, to be taken orally	White- to clean the foetus and wash the womb Red- reduce the blood pressure

**Table 8: Medicinal Plants Used During Postnatal Period**

	Plant species used	Family	Local Name	Part(s) used	Preparation and application method	Purpose
a.	<i>Ficus polita</i> and <i>jatropha curcas</i>	Moraceae Euphorbiaceae	Durumi	leaves	The leaves of are boiled together and used in steaming the body after delivery. The boiled water is used for bathing too, for more than two weeks. It is advisable for the mother to steam her body, and bath with the water;	It is believed to provide and restore the strength of the mother. It helps in flushing blood out of the breast feeding mother.
b.	<i>Moringa oleifera</i>	Moringaceae	Zogale	Flowers, leaves.	Flower juice is taken and leaves are eaten when cook.	Increase the milk content and quality. helps in providing vitamins and minerals to both the mother and child, increase the quality and flow of mother's milk when breast feeding and also Regular intake of leaves can prevent anemia and most forms of malnutrition.
c	<i>Vernonia amygdalina</i>	Asteraceae	Shuwaka	Leaves	The leaves juice is taken orally	Increases the flow and thickness of breast milk and serves as antibiotic to the infants.
d	<i>Azadirachta indica</i>	Fabaceae	Dogon yaro	Leaves	Steaming	To regain strength and contract weak muscles
f	<i>Acacia nilotica</i>	Bagaruwa		Pulp	Dry the pulps grind it and put the powder in to boiled water in water bath and sit inside	To constrict the vaginal muscles

### Parts Used.

In this study, various plant parts were used for the herbal preparation. Commonly, leaves 45%, of all plants listed roots and rhizome 25%, stems and bark 18%, flowers 10%, pods and pulp 6% and steaming and bathing 2%. There was no record of using the whole plants. According to informants, the leaves is the main plant part used in the maternal health care as par as traditional medicine is concern. This may arise from the fact that the leaves act as reservoirs for water and mineral uptakes, which is rich with variety of secondary metabolites such as steroids, alkaloids, terpenes, and volatile organic compounds. [17-19] 90% of the documented species were used individually, while the remaining 10% were recommended to be used in mixtures of either other plants or some substances like potassium.

### Knowledge of the medicinal Plants

A total of 11 species of medicinal plants were documented in this study. From Table 6-8. 8 order, 11 genera and 9 botanical families were presented, indicating that the medicinal plants were much diversified taxonomically. The top most represented families were Fabaceae, Malvaceae with two species each. while the remaining 9 families are (Euphorbiaceae, Anacardiaceae, Moringaceae, Moraceae, Meliaceae, Asteraceae and Asclepiadaceae), which represented only one species each. Uncontrolled logging and deforestation could cause threats to the species of climbers and eventually erode local knowledge about medicinal plant. [15] Therefore, not only is documenting ethnomedical knowledge of plants an inventory per se, but it also contributes to the issue of biodiversity conservation threats such as deforestation, habitat modification, and unsustainable overexploitation

### CONCLUSION

This study reports a complete data on the most widely recognized and esteemed medicinal plants of Zangon Kataf for maternal health care, there are no

detailed information accessible on the ethnomedical knowledge of plant species for the site of the survey. The present report found that the survey site an affluent in restorative medicinal plant and ethno medicine is still transcendent over orthodox. 11 medicinal plants were documented, use of leaves and bark was found to be the used parts then flowers and followed by seeds and pulp/pods. All the plants were found efficient and shown a positive result. This report is a benchmark information for stake holders in pharmaceutical industries and research establishments to choose esteemed plant with high utilize values for further screenings to find new drugs.

### Recommendations

As a way of recognising the values and roles of traditional medicinal knowledge in the reproductive health-care provision, extensive research into the efficacy and safety of herbal uses in the management of reproductive-related disorders needs to be done. The study of the use and health consequences of pregnancy-related traditional medicine is significant for diverse reasons economic infrastructure, traditional medicine is their only hope, meanwhile the following recommendations need to consider;

- It is recommended that reported medicinal plants having potent action for breast cancer need be screened for pharmacological activities.
- This traditional knowledge need to be preserved in order to avoid erosion of knowledge.
- Similar research need to be carried out in different diseases for proper documentation.

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