

## MEDICINAL UTILIZATION OF HERBS FOR THE TREATMENT OF ERECTILE DYSFUNCTION IN LERE LOCAL GOVERNMENT AREA OF KADUNA STATE, NIGERIA

Faleyimu, O.I<sup>1</sup> and Oso, A.O<sup>2</sup>

<sup>1</sup>Department of Biological Sciences,  
Ondo State University of Science and Technology, Okitipupa.

<sup>2</sup>Ministry of Forestry, Abeokuta, Ogun State.

NIGERIA

[orimoloyespecial@yahoo.com](mailto:orimoloyespecial@yahoo.com)

### ABSTRACT

*This paper examined the indigenous uses of medicinal plants for the treatment of erectile dysfunction in Lere Local Government Area of Kaduna State, Nigeria. One hundred (100) respondents were purposively selected by using well-structured questionnaires. Three groups of respondents viz: farmers, herb traders and civil servants were interviewed on the use of medicinal plants for the treatment of erectile dysfunction. Descriptive statistics were used for the analysis. The study revealed that 62.5% of the respondents' age range from 30-50 years and most of them are male (70%). A total of twenty-four families of medicinal plants were identified with the ability to control and cured erectile dysfunction. Some of the forest plants used as single include *Ximeniaamericana*, *Hispidumgajava*, *Gardenia aqualla*, *syzygumguineense*, *Adansoniadigitata*, *Cola nitida*, *Parkiabiglobosa*, *Butyrospermumparadoxum*, *Khayasenegalencis* and *Loudetiaphragmitoides* while others are use in combination for effective treatment. These include *Waltheriaindica* and *Citrus lemon*, *Zimeniaamerciana* and *Phyllathusamarus*, *Cola nitida* and *Cross pteyx*, *ParkiaBiglobosa* and *Butytropermumparadoxum* and *Hispidumgajava*, *Ipomoea coptica* and *Parkiabiglobosa*. There must be immediate effort to ensure the conservation of diverse biological resources and the preservation and application of local cultural knowledge on the use of these resources.*

**Keywords:** Erectile dysfunction, medicinal plants, biological resources, traditional medicine

### INTRODUCTION

In recent years, there has been a growth of interest in traditional medicine, in part driven by the interest in complementary medicine in industrial countries and in part resulting from the interests of the international pharmaceutical industry. More than 35,000 plant species are being used in various human cultures around the world for medical purposes and many of them are subjected to uncontrolled local and external trade (Lewington, 1993). So far, natural products from fewer than 40 tropical species have been incorporated into modern medicine and only a fraction of the tropical flora has been thoroughly analysed for their pharmacological activity. Therefore, the annual extinction rate of an estimated 3,000 plant species is a matter of great concern as it could imply the loss of a potential drug against an incurable condition, such as dementia, cancer, influenza or AIDS. The resulting health impact on the basic needs of the population in

developing countries is equally important. Demand for herbal medicines has led to significant changes in traditional patterns of medicinal plant harvesting and, as in the case of *Prunusafricana* in Cameroon, has placed some species under threat. Recently, the world Health Organization estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary health care (Faleyimuet *al* 2010). In the last twenty years in the United States, increasing public dissatisfaction with the cost of prescription medications, combined with an interest in returning to natural organic remedies, has led to an increase in the use of herbal medicines. In Germany, roughly 600 to 700 plant based medicines are available and are prescribed by approximately 70% of German Physicians, (Herbal medicine <http://www.umm.edu/altmed/articles>). Herbs have a variety of uses including culinary and medicinal usage. General usage differs between culinary herbs and medicinal herbs. Herbs are “generally recognized as safe” by the Food & Drug Administration (FDA), at least at concentrations commonly found in foods. Medicinal plants continue to provide valuable therapeutic agents, both in modern medicine and in traditional system (Reaven, 1998). The leaves, roots, flowers, seeds, root bark, inner bark (cambium), berries and sometimes the pericarp or other portions of the plant might be considered in medicinal or spiritual use. In the medicinal uses, herbs (plants) contain phytochemicals that have effects on the body (John and Roger, 2000). Until the 20<sup>th</sup> century most medicinal remedies all over the world were obtained from plants. For example, purple forglove was found to be helpful in dropsy, the opium poppy for pain, cough, and diarrhea, and the cinchona bark for fever. With the emergence of chemical and pharmacological methods in the 20<sup>th</sup> century, it became possible to identify the active ingredients in the plants and study them. Furthermore, once the chemistry was understood, it was possible to synthesize related molecules with more desirable properties. According to (Sodimuet *al*, 2008), today, the two most effective and widely accepted drugs for the treatment of malaria today emerged through herbal traditional medicine viz: Quinine from the bark of the Peruvian cinchona tree and artemisinin from the Chinese antipyretic *Artemisia annua* L. Hence, throughout history, the medicinal benefits of herbs are quoted. There may be some effects when consumed in the small levels that typify culinary "spicing", and some herbs are toxic in larger quantities. For instance, some types of herbal extract, such as the extract of St. John's-wort (*Hypericumperforatum*) or of awa (*Piper methysticum*) can be used for medical purposes to relieve depression and stress. However, large amounts of these herbs may lead to toxic overload that may involve complications, some of a serious nature, and should be used with caution. One herb-like substance, called Shilajit, may actually help a lower blood glucose level which is especially important for those suffering from diabetes. When herbal medicine becomes popular it can be over-exploited and the very resource threatened with extinction. The pharmaceutical interest in plants as a source of medicines is less likely to raise issues of concern about sustainability of harvesting, as relatively small amounts of plant material are needed to conduct the screening for bioactivity that is the basis of many contemporary drug development strategies (Seters, 2004). The objective of this paper is to examine the indigenous uses of medicinal plants for the treatment of erectile dysfunction in Lere Local Government Area of Kaduna State, Nigeria.

## METHODOLOGY

### Study Area

This study was conducted in Lere local government area of KadunaState. Lere Local Government area was created 1989. It emerged out of the former Saminaka local government

area which was divided into Lere and Kauru Local Government Areas during the military Administration. The Local Government covers about 2567 Km<sup>2</sup>; with a population of 331,161 people (NPC, 1991). The Local government is situated on the eastern part of the state located between latitude 9<sup>0</sup>N and 10<sup>0</sup>N and longitude 8<sup>0</sup>E and 9<sup>0</sup>E of the prime meridian. It shares borders with Kano from the Northern part, and it shares common border with Bauchi and Plateau States in the East. The Climate is considerably good for arable crops. The local government falls in the Guinea savanna vegetation zone. The major occupation of the local government is farming, rearing of cattle (Livestock), trading, fisheries and civil servants. Rainfall extends from early October, while the harmattan sets in the mid October/November and extends towards February. The Major towns are Saminaka, UngwanBawa, Lere, YarKasuwa, Dan-Alhaji, Kahugu, Gure, Doka, GarunKurama, Kayarda and Ramin – Kura.

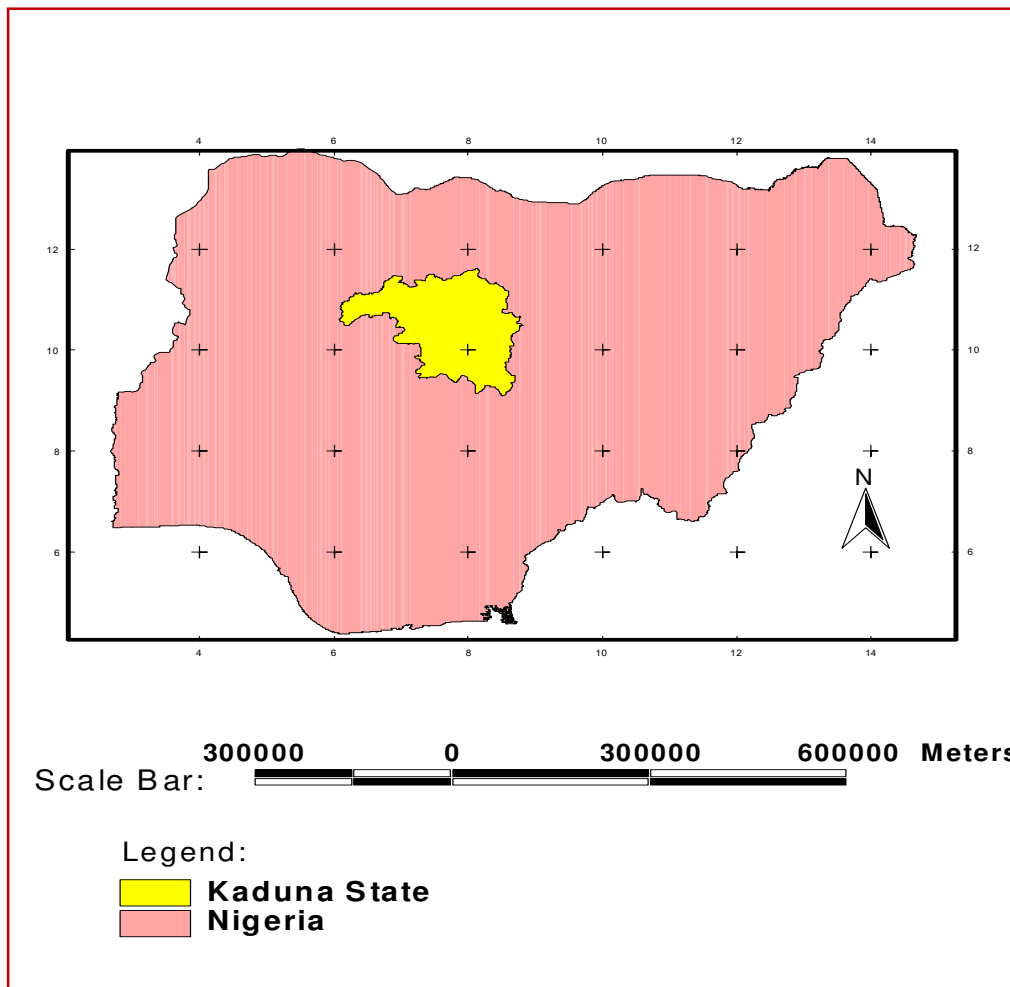


Figure 1. Map of Nigeria showing Kaduna State

### Population and Samples

The populations of the study covered the traditional healers, medicinal traders, civil servants and farmers. A total of 80 questionnaires were administered to the respondents randomly in each area. The questionnaire was divided into two (2) sections: A and B. section A dealt with the demographic characteristics of the respondents, while section B questions were framed in order to identify the plants used for treating impotence/weak erection and the methods of use.

## Data Analysis

Information obtained through personal interview and questionnaire administrations were used for data analysis. Frequency distribution, table and percentages were used for the data analysis.

## RESULT AND DISCUSSION

Table 1. Demographic characteristics of respondents

VARIABLES	FREQUENCY	PERCENTAGE (%)
<b>Age</b>		
10-20	2	2.50
21-30	6	7.50
31-40	25	31.25
41-50	25	31.25
51-60	12	15
≥ - 60	10	12.50
TOTAL	80	100
<b>Sex</b>		
Male	56	70
Female	24	30
TOTAL	80	100
<b>Occupational Status</b>		
Traditional healer	21	22.50
Herb trader	32	37.50
Civil servant	26	38.75
Other	1	1.25
TOTAL	80	100
<b>Educational Status</b>		
Primary School	21	26.25
Secondary School	29	36.25
Tertiary Institution	16	20
No Formal Education	14	17.50
TOTAL	80	100
<b>Marital Status</b>		
Single	13	16.25
Married	35	43.75
Divorce	12	15
Widow(er)	20	20
TOTAL	80	100

Table 1 revealed that 62.5% of the respondents in Lere Local Government Area fall under the age of 31-50 year and most of the respondents are male (70%) while 30% of the respondents are female. The table above showed that most of the respondents (43.75%) are married. The table also showed that most of the respondents in Lere Local government are literate with 56.25% having up to secondary and tertiary education.

**Table 2: Medicinal plants for treating erectile dysfunction**

S/ N	Local Names	Botanical Name	Family Name	Type of Plant	Cultivat ed or Wild	Part use	Uses/Method of Uses
1.	Madachi	KhayaSenegale nsis (Hochst)	Mimosaceae	T	W	Root	Soak herb in a cup of water and drink every day.
2.	Lemuntsami	Citrus Engt lemon	Rutaceae	T	C	Liquid from fruit	Cook with small quantity of water and small quantity of honey, and drink every morning.
	Tafarnuwa	Allium sativumlinn	Alliaceae	S	C	Bulb	
3.	Kokiya	Strychnos inoculate Hulth	Loganiaceae	T	W	Fruit	The herb mixed with small quantity of honey and drink.
4.	Dinya	Vitexdonianalin n	Verbenaceae	T	W	Back	Boiled with water, and drink when cold every day.
	Kokiya	Strychnosinnoc ua Hutch	Loganiaceae	T	W	Leave	
5.	Hankufa	Waltheria Indica	Sterculiaceae	S	W	The whole fruit	Cooked with small quantity of water and taken once daily for 4

							weeks.
	Lemon Tsami	Citrus Lemon	Rutaceae	T	C		water
6.	Tsintsiyarm aza	Loudetiaphrag mitoides		T	W	Root	Cook with small quantity of water and small quantity of red potassium, to be taken three times daily for about three months.
	Tafarnuwa	Allium Sativum	Alliaceae	S	C	Roots	
7.	Magarya	Ziziphusabyssin ica	Rhamnaceae	T	W	Leaves	cook with water and taken everyday for 1 month.
	Zoborodo	Abelmoschuses culentus		S	C	Flowers	
8.	Kadanya	Bustyrosermum paradoxum	Sapotaceae	T	C	Root	Soak in water. Take every day for one month.
9	Dorawa	ParkiaBiglobos a	Fabaceae	T	C	Back	The herb is dried and grinded and mixed with water. Take one spoonful 4 times daily.
10.	Baure	Ficussycomorus (mig)	Moraceae	T	W	Root	Cooked with water and red potassium and drink 2 times daily.

11.	TsamianK asa	Phyllathusamar usSchum	Euphorbacea e	S	W	The whole part	Soaked inside a bowl of water and drink 1 time daily.
	Lemon Tsami	Citrus lemon	Rutaceae	T	C	Fruit Water	
12.	Gwandanda ji	Annonasenegal ensis	Annonaceae	T	W	Leave stem	dry and grind and taken with soft drinks or meals for 1 month.
	Chitta	Zingiberofficin ale rose	Zingibaracea e	S	C	Stem	
13.	Goro	Cola nitida	Sapindaceae	T	C	Root	Soak in water and taken 3 times daily for two months.
14.	Tsada	Zimeniaamercia na	Olaceceae	T	C	Root	Cooked with water and taken every day.
	TsamianK asa	Phyllathusamar usSchum	Euphorbacea e	S	W	leave	
15.	Goro	Cola nitida	Sapindaceae	T	C		The herbs are grinded and taken together.
	KashinAwa ki	Cross pteyx	Cienopophon anaceae	S	W		
16.	KashinYaw o	Hispidum gajava	Asteraceae	S	W	Leave root	Soak them in bowl of water and taken every day for 2 months.
	Kadanya	Bustyrospermu mparadoxum	sapotaceae	T	C		

17.	Zaitum	Oleahochstetter i	Oleaceae	T	W	Oil	Mix with small quantity of honey and taken together for at least 2 weeks.
18.	Kuka	Adansoniadigit ata	Rutaceae	T	C	Root	Mixed with red potassium and cooked together and taken 2 times daily.
19.	Dinya	Viterdoniana	Verbenaceae	T	W	Root Root	Soak in a bowl of water of about 2 liters and taken every day in the morning.
	saiwadubu	Ipomoea Coptica	Concolvulace ae	S	W		
20.	Tsada	XimieniaAmeric iana	Olacaceae	T	C	Back	Soaked in water and taken 3 times daily.
21.	Zaitun	Oleahochstetter i	Oleaceae	T	W	Oil	Grind and soak in water and taken every day for three weeks.
	Madachi	KhayaSenegale nsis	Mimoceae	T	C	back	
22.	TsintsiyarM aza	Loudetiaphrag mitoides		S	W	Root	Cook with red potassium and then taken.



23.	Kokiya	Strychnosinnocua(Hutch)	Loganiaceae	T	W	Back	Grind and taken with meal.
	Tafarnuwa	Allium Sativum (linn)	Alliaceae	S	C	Bulb	
24.	Dorawa	ParkiaBiglobosa	Fabaceae	T	C	Root	Soak in water and drink everyday.
	Kadanya	Bostyropermu mparadoxum		T	C	Back	
25.	Barbata	Guieraseneghal esis	Combrataceae	S	W	Leaves	Cook with potassium and drink 2 times daily.
26.	Saiwadubu	Ipomoea coptica	Convolulaceae	S	W	Root	Soak in water and drink 2 times daily.
	Dorawa	Parkiabiglobosa	Fabaceae	T	W	Root	
27.	Kokiya	StrychnosInnocua (Hutch)	Loganiaceae	T	W	Root	Boil with water for at least 3 hours. To be taken cold everyday.
28.	KashinYawo	Hispidum gajava	Asteraceues	S	W	Root	Cook with small quantity of honey and then drink the mixture.
29.	Tsada	Zimeniaamerciana	Olacaceae	T	C	Root	Boil with water for at least 2 hours and drink when cold.

**Table 3. Representative Families of medicinal plants for treating impotency**

S/N	FAMILIES	FREQUENCY
1	Rubiaceae	2
2	Sapindaceae	3
3	Annonaceae	1
4	Convolvulaceae	2
5	Moraceae	3
6	Oleaceae	2
7	Allianceae	3
8	Ctenolophonaceae	1
9	Mimosaceae	2
10	Anardiaceae	1
11	Caesalpinaceae	1
12	Moringaceae	1
13	Combrataceae	1
14	Loganiaceae	4
15	Verbenaceae	2
16	Sterculiaceae	1
17	Rutaceae	4
18	Rhamnaceae	1
19	Sapotaceae	3
20	Fabaceae	3
21	Euphorbaceae	2
22	Zingibaraceae	1
23	Oleaceae	2
24	Asteraceae	2

The study revealed that a total of twenty-four families of forest plants were identified with the ability to control and cured erectile dysfunction (impotence/weak erection). The medicinal plants were examined with the work of Gbile (1980) for correctness. Some of the forest plants used as single include *Ximenia americana*, *Hispidium gajava*, *strychnosca*, *combrataceae*, *Gardenia aqualla*, *syzygum guineense*, *Adansonidigitata*, *OleahochStetteri*, *Cola nitida*, *Parkiabiglobosa*, *Butyrospermum paradoxum*, *Khayasenegalensis* and *Loudetiaphragmitoides* while others are use in combination for effective treatment. These include *Waltheria indica* and *Citrus lemon*, *Zimenia americana* and *Phyllathus amarus*, *Cola nitida* and *Cross pteyx*, *Parkia Biglobosa* and *Butyrospermum paradoxum*, *Ipomoea coptica* and *Parkiabiglobosa*.

## CONCLUSION

It is a feature of traditional health systems that they span a diverse range of policy areas that extend beyond the immediate domain of health. For example, prospects for the future supply of medicinal plants impact the long term viability of traditional health systems. Training of practitioners and preservation of traditional ecological and medical knowledge lie at the core of future prospects for ancient but challenged traditions. In many traditional societies, women are the primary herb gatherers and also the herbalists. Societal changes in work and family patterns also have an impact on the nature of the traditional health sector and the services it plays in providing everyday health care to the majority of the population of most countries.

Investments are needed for the development of appropriate conservation, cultivation and harvesting strategies which will simultaneously meet the demand for low-cost and locally-available medicines. At the same time, there must be immediate effort to ensure the conservation of diverse biological resources and the preservation and application of local cultural knowledge on the use of these resources.

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