

RESEARCH ARTICLE

A SURVEY OF HERBAL ABORTIFICIENTS AND CONTRACEPTIVES IN SOKOTO, NORTH-WEST NIGERIA.

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Abstract

The study was a survey of medicinal plants used as abortifacients and contraceptives in Sokoto. A total of 10 herbal sellers were interviewed using semi structured questionnaires and open ended conversation. A total of 15 species belonging to 12 families were cited as abortifacients while a total of 12 species belonging to 9 families were cited as contraceptives. Some of these are used as single agents while some are used as combination. Some of these plants have been previously reported in literature. The most frequently cited contraceptive herb is *Ricinus communis* while that of abortifacient is *Lawsonia inermis*. Maximal numbers of plants are recorded from Caesalpiniaceae family as abortifacients and Fabaceae family as contraceptives.

Keywords: Ethnobotanical survey, abortifacients, contraceptives, herbs.

Introduction

A vast majority of prescription drugs used in the world contain compounds that are directly or indirectly, via semi-synthesis, derived from plants (Oksman-Caldentey and Inze, 2004). Even the synthetic drugs and compounds used in modern times owe their active chemical compound to a bioactive compound in a plant, which has been identified and then copied (Rates, 2001). Thus, plants continue to be a very important resource for new medicines and beneficial compounds. The World Health Organization (WHO, 2003) estimates that nearly 80% of the world's population relies on traditional healing modalities and herbs.

Rapid rise in population has caused serious problems in the economic growth and all round

human development leading to poverty in developing countries (Dabhadkar and Zade, 2012). Family planning has been promoted through several methods of contraception, but due to serious adverse effects produced by synthetic steroidal contraception (Bingel and Benoit, 1973; Bingel and Benoit, 1973), attention has been focused on indigenous plants for possible contraceptive effect. The importance of plants as a source of antifertility drugs has been emphasized by many researchers (Farnsworth et al., 1975; Yakubu et al., 2007). Herbal contraceptives and abortifacients are those plants used for birth control or in the prevention of pregnancy and for premature expulsion of a foetus from the womb. Many plants have been reported to have sterilizing, contraceptive and abortifacient

properties (Bablola, 2009). Plants that have contraceptive and abortifacient properties may act through rapid expulsion of the fertilized ova from the fallopian tube, inhibition of implantation due to a disturbance in oestrogen - progesterone balance, foetal abortion, perhaps due to lack of supply of nutrients to the uterus and the embryo, and also on the male side through affecting sperm count, motility and viability (Ciganda and Laborde, 2003; Kaunitz and Benrubi, 1998; Nounmi and Tchakonang, 2001).

Antifertility agents obtained from indigenous medicinal plants would be of immense benefit especially to inhabitants of developing countries, since the cost of these drugs would be within their means (Goonasekera et al., 1995). This study is aimed at documenting ethnobotanical potential of abortifacients and contraceptives herbs use among herbal medicine sellers in Sokoto, Nigeria.

Methodology

Study area

The study was carried in Sokoto, located in the North West region of Nigeria. Sokoto state has coordinates of: 13°05'N 05°15'E., covering an area of 25,973 km² (10,028 sq mi) with 23 local government areas. Ethno botanical information was sort among herb sellers at the Kara market, a renowned herbal market, in Sokoto State metropolis.

Ethnobotanical Survey

The survey was conducted from 28th Feb, 2013 to 5th March, 2013. Herbal medicine sellers who were

the informants were interviewed using semi-structured questionnaires and open-ended conversations. A total of 10 questionnaires were administered to the herbal medicine sellers. The interview and the discussions were carried out in the local languages of the respondents (Hausa) since the authors do not speak the language, an interpreter was used. Socio demographic data (age, sex and duration of practice), data on local names, plants part used, mode of usage or administration were collected on the field.

Result

Socio demographic data

A total of 10 herb sellers were interviewed, the majority of whom were males 9 (90%). The age of the respondents ranged between 30-80 years while their duration of practice ranged between 10-60 years. The result is presented in Table 1.

Abortifacient Herbs used in Sokoto

A total of 15 species belonging to 12 families were mentioned by the 10 informants as presented in Table 2. Some of these herbs are used in combination as presented in Table 3.

Contraceptive Herbs used in Sokoto

A total of 12 species belonging to 9 families were mentioned by the 10 informants as presented in Table 4. Those used as combination therapy is presented in Table 5.

Table 1: Socio demographic data of the respondents

Parameters	Specification	N(%)
Sex	Male	9(90)
	Female	1(10)
Age(yrs)	21-30	1(10)
	31-40	3(30)
	41-50	1(10)
	51-60	0(0)
	61-70	1(10)
	71-80	4(40)
Duration of practice	0-10	2(20)
	11-20	2(20)
	21-30	1(10)
	31-40	1(10)
	41-50	0(0)
	51-60	4(40)

N= Number of respondent
%= Percentage

Table 2: List of medicinal plant used as Abortifacients by Herb sellers in Sokoto

S/ No	Botanical Name	Family	Local Name (Hausa)	Time Used (Trimester)	Part Used	How Used	Method Of Preparation	Citation Frequency	Reported Abortifacient activity
1	<i>Acacia polyacantha</i>	Fabaceae	Karki	1 st	Seed	Dry	Powdered	2	None
2	<i>Anogeissus leiocarpus</i>	Combretaceae	Markee	1 st	Leaf	Dry	Powder mixed with water	1	None
3	<i>Azadirachta indica</i>	Meliaceae	Dongoyaro	1 st	Stem bark	Fresh or Dry	Boiled in water with red potash	1	None
4	<i>Boscia senegalensis</i>	Meliaceae	Billoo	1 st	Root	Dry	Boiled in water	1	None
5	<i>Cassia arereh; C. sieberana</i>	Caesalpinaceae	Margaa	1 st	Root	Fresh or Dry	Boiled in water	2	None
6	<i>Cissus populnea</i>	Vitaceae	Loda	1 st	Leaf	Dry	Boiled in water	1	Kokwara, 2009
7	<i>Clerodendrum capitatum</i>	Labiatae	Mashaayii	1 st	Seed	Dry	Powdered	2	None
8	<i>Kigelia Africana</i>	Bignoniaceae	Kunkuisha	2 nd	Root bark	Dry	Boiled in water with potash	1	None
9	<i>Lannea microcarpa</i>	Anacardiaceae	Faaruu	1 st	Stem bark	Dry	Boiled with potash	1	None
10	<i>Lawsonia inermis</i>	Lythraceae	Lali	1 st	Root	Fresh or Dry	Boiled in water	3	Aguwa, 1982; Chandhary et al, 2010; Mudi et al, 2011.
11	<i>Oryza spp</i>	Capparaceae	Kidis	1 st	Root	Dry	Boiled in water	1	None
12	<i>Piliostigma reticulatum</i>	Caesalpinaceae	Kalgo	1 st	Stem bark	Dry	Boiled in water with potash	1	None
13	<i>Prosopis Africana</i>	Mimosoideae	Kiryaa	1 st	Stem bark	Dry	Boiled in water with potash	2	None
14	<i>Sorghum bicolor</i>	Poaceae	Ayangwaa	1 st	Leaf	Dry	Boiled in water	1	None
15	<i>Ximenia Americana</i>	Olacaceae	Tsaada	1 st	Seed	Dry	Powdered	2	None

Table 3: List of medicinal plant used as Contraceptives by Herb sellers in Sokoto .

S/N	Botanical Name	Family	Local Name (Hausa)	Part Used	How Used	Method Of Preparation	Citation Frequency	Reported Contraceptive activity
1	<i>Albizia chevalieri</i>	Mimosad ae	Katsari	Bark and Seed (male plant)	Dry	Boiled in water	1	None
2	<i>Chloris pilosa</i>	Poaceae	Kafarfa kara	Leaves	Dry	Powdered taken with milk	2	None
3	<i>Crotalaria spp</i>	Fabacea e	Biyar raana	Fruit and Seed	Fresh or Dry	Boiled in water	1	None
4	<i>Dalbergia saxatilis</i>	Fabacea e	Runhu	Stem bark	Dry	Powdered taken with milk	1	None
5	<i>Erythrina senegalensis</i>	Fabacea e	Jinjirya	Fruit and Seeds	Fresh or Dry	Boiled in water	1	None
6	<i>Pavonia hirsuta</i>	Malvace ae	Tsu	Seed (female plant)	Dry	Powdered taken with milk	1	None
7	<i>Phoenix dactylifera</i>	Arecace ae	Zabiya	Leaf	Fresh	Leaf is eaten raw	1	None
8	<i>Prosopis Africana</i>	Mimosoi deae	Kiriya	Root bark	Dry	Powder	1	None
9	<i>Ricinus communis</i>	Euphorbi aceae	Zurma	Seed	Dry	Powder	3	Nath et al, 2013
10	<i>Strychnos spinosa</i>	Strychna ceae	Taura	Stem bark	Dry	Powdered with milk	1	None
11	<i>Vitellana paradixa</i>	Sapotac eae	Kade	Stem bark	Dry	Powdered taken with milk	1	None
12	<i>Ximenia Americana</i>	Olacace ae	Tsaada	Root bark	Dry	Powder	1	None

Table 4: Medicinal plants used in combination as contraceptives

Serial number	Name of plant 1	Name of plant 2	Name of plant 3
Recipe 1	<i>Strychnos spinosa</i>	<i>Dalbergia saxatilis</i>	<i>Vitellana paradixa</i>

Table 5: Medicinal plants used in combination as abortifacients

Serial number	Name of plant1	Name of plant 2	Name of plant 3
Recipe 1	<i>Clerodendrum capitatum</i>	<i>Acacia polyacantha</i>	<i>Ximenia Americana</i>
Recipe 2	<i>Lawsonia inermis</i>	<i>Cassia arereh; C. sieberana</i>	-
Recipe 3	<i>Piliostigma reticulatum</i>	<i>Prosopis Africana</i>	<i>Lannea microcarpa</i>
Recipe 4	<i>Cissus populnea</i>	<i>Anogeissus leiocarpus</i>	<i>Sorgum bicolour</i>
Recipe 5	<i>Lawsonia inermis</i>	<i>Cassia arereh; C. sieberana</i>	<i>Azadirachta indica</i>
Recipe 6	<i>Oryza spp</i>	<i>Boscia senegalensis</i>	<i>Prosopis Africana</i>

Figure 1: Plant parts used as abortifacients

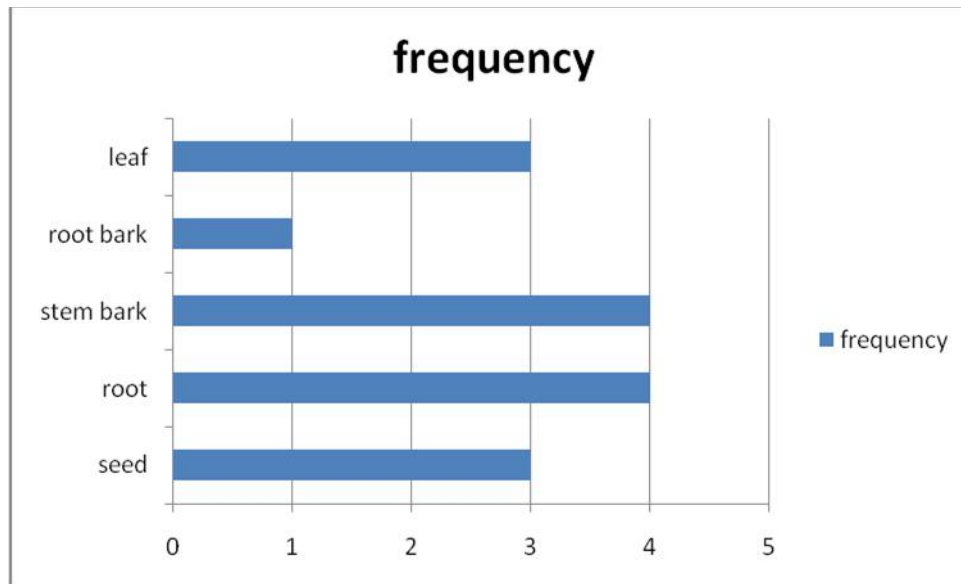
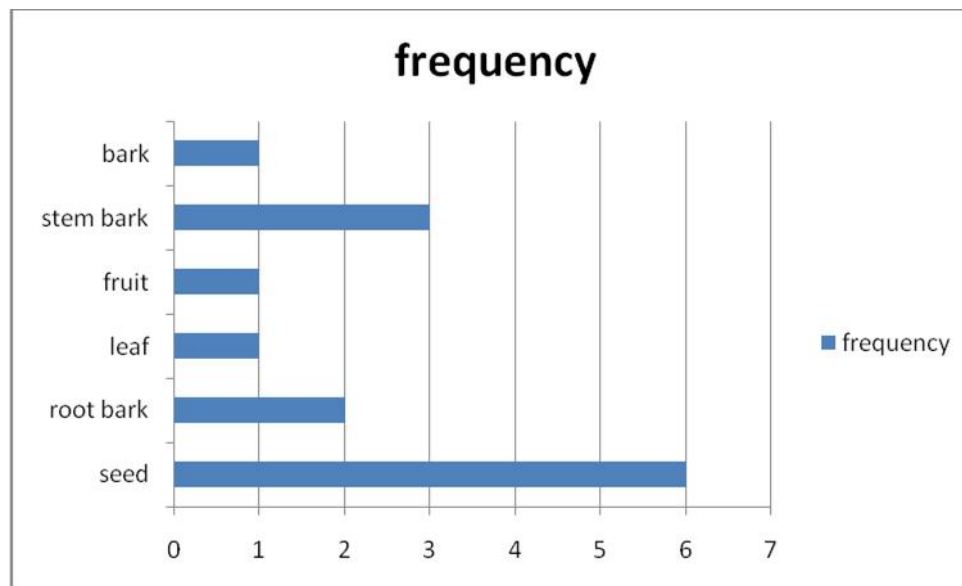


Figure 2: Plant parts used as Contraceptives :



Discussion

The use of plants as abortifacients, emmenagogues, and as local contraceptives had been known and to some extent documented by the ancient physicians (Rodrigues, 2007). Literature survey of the cited plants in this study showed that *Lawsonia inermis*, *Cissus populnea*, *Sorghum bicolor* and *Azadirachta indica* have been previously reported as having abortifacient property while *Ricinus communis* has been previously reported as an herbal contraceptive. In this study, maximal numbers of plants are recorded from Caesalpiniaceae family as abortifacients and Fabaceae family for contraceptives. This is similar

to reports of Das *et al*, 2014. However in a similar study in South -west Nigeria, Ashidi *et al*, 2013 reported that most of the plants encountered belong to the Euphorbiaceae family. Different plant parts such as leaf, root, seed, stem, rhizome and whole plant have been previously reported for abortifacients and contraceptives. In this study, the most frequent plant part reported as contraceptive is seed, although in a similar study in India, the plant part mostly cited was leaf (Sathiyaraj, 2012). The multi-component nature of some of the recipes in this study is known for other traditional medicines (Lawal *et al* 2009, Adeyemi *et al* 2010) and is believed to improve efficacy through synergism.

The use of potash in abortifient and contraceptive preparations have been reported previously in literature (Bablola, 2009).

There are reports in literature regarding the antifertility of crude plants extracts and the bioassay guided fractionation of them yielding active principles (Dabhadkar and Zade, 2012; Jain *et al.*, 2010 and Zang *et al.*, 2007) which are known to be safe compared to synthetic agents available today for fertility control that produce severe side effects such as hypertension, weight gain, cancer and hormonal imbalance (McNamara, 2013). Plants documented in this survey whose abortifient and contraceptive activity are yet to be validated scientifically are recommended for further biological investigation to establish the claim of the respondents and hence serve as potential sources new and safe antifertility agents..

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