Ethno-Medicinal Values of Some Plant Species Termed as Weed among the Three Major Tribes in Kogi State, Nigeria

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Abstract
In Nigeria, many plants are employed for the treatment of several diseases, but there is constant modification of the ecosystem by human activities which brought about change in the vegetation and resultant invasion of invasive plant species called weeds. These weeds have some serious negative side effect on man and his environment such as reduction in crop yields. The medicinal value of these plants are not taken into consideration as such there is dearth of knowledge of the uses of these valuable plants that are now mostly seen as weeds. It is therefore important to document the medicinal values of these plants. This research supports the local use of this plant for therapeutic purposes especially in this time of economic recession. The knowledge opens a window of business potential that will improve the economic situation of the nation.

Key words: *Ethno-medicine, weeds, tribe, ethnobotany, medicinal plants, Kogi state, Nigeria.*

Introduction

Ethno – medicine has long been recognized as one of the oldest forms of remedies used by humans. Through human evolution, ethnobotanical knowledge is seen as essential component relied upon for nutrition, local supplies of foods and medicines from wild plant. Although traditional ethnobotanical knowledge is still critical in a few regions where indigenous cultures and native ecosystems co-exist, this knowledge base has gradually eroded and gone extinct in many others. In still other regions, it lies dormant in the memories of elders who retain both skills and knowledge specific to the ecosystems in which they live or were raised. (Amjad, 2015; Manikandan and Alagu, 2014; Vinoth and Manivasagaperumal, 2014; Talberth and Leopold, 2012). Plants are generally rich sources of many natural herbal products which are mostly used for human welfare especially in tonic to loss of viability and also reduce the human pain and suffering from many diseases. From the ancient period man has been used several different plants to cure all body pain and different diseases. Now-a-days throughout the world several thousands of plants mostly weed plants are medicinal but very few drug plant are cultivated (Dhanam and Elayaraj, 2014; Dangwal *et al*., 2010; Iduh and Ndukwu, 2006; Upma *et al*., 2006).

A weed is any plant growing where it is not wanted or interfering with the objectives of humans. This means that weeds are undesirable and grow where other plants desirable is supposed to grow or where no plants should be. Weeds normally invade natural vegetation, usually adversely affecting native biodiversity or ecosystem functioning or invade agricultural land, impacting on the growth and productivity of cultivated crops. However, weeds are useful to human beings as food, erosion control, medicines, aesthetic value, shelter, supply of organic matter and mineral nutrients to the soil. Most agricultural weeds are usually regarded as undesirable and targeted for eradication. However, weeds are useful to human beings as food and traditional medicines. Many weeds contain chemical compounds which are biologically

active and potentially useful for medical science. Few studies have been done to document the uses of weeds as traditional vegetables (Alfred, 2013; Rex and Lyla, 2009).

Many people in developing countries like Nigeria still rely on traditional healing practices and medicinal plants for their daily healthcare needs. There is abundant undocumented traditional knowledge of herbal remedies used to treat diseases in most cultures especially the three major tribes of Kogi State. Different traditional healing practices worldwide are designed for either therapeutic or prophylactic use in human or animal diseases (Ayannar and Ignacimuthus, 2011; Offiah *et al*., 2011). Native people can say much about their local plants; for instance, whether they are poisonous, useful for curing diseases, good for roofing (i.e. waterproof) or for fuel. They also know how to 'prepare' the plants for these uses, when and how to harvest them and which parts and also when and where they grow. This invaluable knowledge is being lost by the destruction of these natural ecosystems and the acculturation of these traditional people (Weston, 1994).

Ethnobotany has two major uses; naming plants accurately allows professionals such as biologists and foresters to talk with communities effectively about vegetation. But beyond identification, the real value of this is to determine the role particular plants play in the economic and cultural life of communities (Amjad, *et al*., 2017; Talberth and Leopold, 2012; Kunja *et al*., 2012; Jeeva *et al*., 2006). Most plants used by the rural communities have biologically active compounds that are effective against various disorders (Rex and Lyla, 2009). For many plants, no use is yet documented in Kogi State, but almost certainly the plant plays a part either in the extensive medical herbarium or for more practical economic purposes.

This current study concentrates on plant species commonly termed as weed (plant that grows easily and are usually found where they are not wanted). This is because people look at the destructive aspects of weed and forget to see any beneficial role played by these plant species in tackling the health challenges and healing the economic situation of the nation.

Materials and methods

For the collection and identification of plants used for medicinal purposes, six field trips were made to each of the three communities in the study area (Anyigba, Kabba and Okene) respectively all located in Kogi State (Figure 1). The study area lies between latitudes 6^0 30’ N and longitude 6^0 10’ E and within the derived savanna zone of Nigeria. The area is an agricultural region characterized by annual rainfall of between 550 – 800 mm and people depend mostly on the natural environment for their livelihood, they are involved in subsistence agriculture and the dominant tribes in the area are Ebira, Igala and Yoruba/Okun.

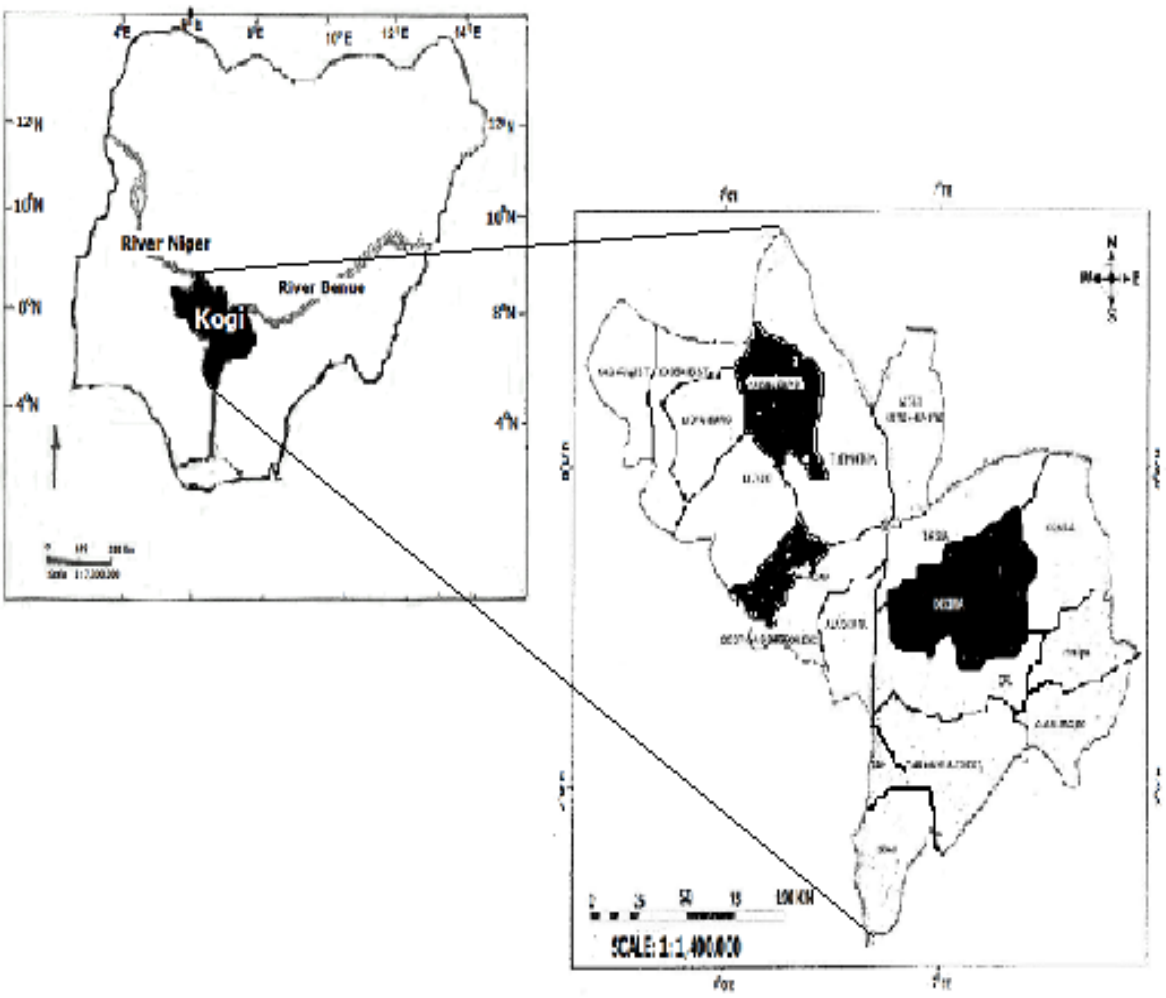

Fig 1: Location of the study area

A total of 50 willing informants comprising elderly men and women who were traditional healers were interviewed to give information regarding the ethno – medicinal uses of plant species in their respective areas. The common and vernacular names of the described species were documented. The plants were collected from the study area, identified and the voucher specimens of all identified species were prepared and submitted to Kogi State University Herbarium.

Results and discussion

The present work is based on the local knowledge of most commonly used weeds. Each weed species used is provided with its scientific name, local name, plant parts mostly used and the uses of these plants

The result obtained in this study need to be subjected to pharmaceutical analysis in other to validate their authenticity and future prospect. The paper carried out the documentation of the herbal health remedies in the region under study and does not prescribe or recommend for their use till further determination by the pharmacologist. Data have been gathered on the traditional uses of plant species. By examining the plant materials collected from the study area using the identification method and medicinal information given was accumulated and described below. The study showed a total of fifty-seven (57) plant species distributed under twenty-seven (27) families, the record of information documented below include the botanical, common and locals or vernacular names; family; habit; uses and parts used.

Table 1: Medicinally important weeds among the Ebira, Igala and Yoruba/Okun people

S/no	Botanical name	Common name	Ebira name	Igala name	Yoruba/ Okun name	Family	Habit	Uses	Part used
1	*Abrus precatorius* Linn	Crab's eye	Eyi uba	Ẹpu /Ọmeju Ichẹkpa	Iwerejee/ Ojulogbo	Fabaceae	Climber	Used as remedy for Cough	Leaves & seeds
2	*Acanthospermum hispidum* DC	Starbur	Asibowu/ Ovareyi – koza	Imiejo	Dagunro gogoro	Asteraceae	Herb	Treats jaundice, snake bite, skin diseases, cough, malaria, epilepsy, vomiting, abdominal pain, convulsion, constipation, and bronchitis.	Leaves and flowers
3	*Aeollanthus pubescens* Benth			Ukpẹku		Lamiaceae	Herb	Used as remedy for Dysentery and diarrhoea	Leaves
4	*Aframomum danielli* K. Schum	Guinea grains	Oguro	Ichabolo	Oburo	Zingiberaceae	Herb	The fruit is eaten as remedy for Sour throat	Fruit
5	*Ageratum conyzoides* Linn	Goat weed	Avi hupahupa	Itanajuwẹ	Imi esu / Ajihewu	Asteraceae	Herb	Used as remedy for skin diseases, wound, diarrhoea and to relieve pain associated with navel in children	Root & leaves
6	*Alchornea cordifolia S.W*	Christmas bush		Eginija (Ọyi)	Ipu / Ipa/Esiri	Euphorbiaceae	Shrub	Used as Purgative and treatment of candidiasis and abdominal pain especially during pregnancy	Leaves
7	*Amaranthus spinosus* L	Spiky amaranth	Itẹtẹrẹ	Ikeke – Ọgọlọ	Tete ologu	Amaranthaceae	Herb	Used to treat fever, laxative, diuretic, eczema, stomach ache, improves appetite, useful in burning sensation, gonorrhoea, hallucination, piles, bronchitis, constipation, as mouth wash for tooth ache, expectorant lessens menstrual flow and reduces leprosy,	Leaves
8	*Ampelocissus indica* (Roxb.) Planch	Wild grape vine		Ọkọtọ/ achiwẹbẹtẹma	Eteku/Etaku	Vitaceae	Climber	Used to Inhibit cancerous wound	Root
9	*Asparagus africanus* Lam			Iga'awule	Aluki/Kadankabe	Liliaceae	Herb	Used as Poison neutralizer	Root
10	*Aspilla africana* (Pers,) C. D. Adams.	Marigold	Ọwu	Idọdọlọ	Yunyun/ Yanyan	Compositae	Herb	Heals wound and sores, stops bleeding, treats fever, skin diseases such as athlete's foot, night sweats, tuberculosis, gonorrhoea, cough and stomach trouble. As enema to pregnant women to quicken and ease delivery.	Leaves Whole plant
11	*Bidens pilosa* Linn	Black jack/ Cobblers pegs/ Spanish needle			Aganmoya/Abere-oloko/Ewe-abere	Asteraceae		Treats wounds and boils, ear aches and eye complaints, coughs, jaundice, fever, worms, oedema, diarrhoea, snakebite and Leukaemia	

12	*Biophytum petersianum* Klotzsch		Chagawukwokwo Oweyi	Uchokunu	Patomo/Padimo	Oxalidaceae	Herb	Paste on the navel removes it and heal the wound, stomach ache, urinary stones, cerebral malaria, skin diseases	Whole plant
13	*Boerhavia diffusa* L.	Hog weed	Oododo	Agolomalo	Etiponola /Eemo /Olowojeja	Nyctaginaceae	Herb	Used as Pain relief, anti-cancer anti-inflammatory, and for the treatment of jaundice, diabetes and protect eye sight.	Root & leaves
14	*Byrsocarpus coccineus Schum & Thonn*	Hunter's pepper		Ijalijẹkpẹ / Achọmadẹlẹ	Amuje/Orikotemi/ Ade	Connaraceae	Herb	Treat skin rashes	Leaves & root
15	*Calotropis procera* (Aiton) R. Br.	Sodom apple/ milkweeds	Avi wara/	Ẹbọ fufu/Ibombomu	Bomubomu	Ascepinadaceae	Shrub	Used in treating intestinal worms, cough, asthma, bronchitis, paralysis, swellings, intermittent fevers, anorexia, inflammations and tumours. as a purgative and aphrodisiacs.	
16	*Cassia alata* Linn syn. *Senna alata* (L) Roxb	Candle stick	Adengugu hi obanyi	Ogujẹba	Asunwon / Ajẹ – ile /Asurun	Caesalpiniaceae	Shrub	Treat Skin infections (ringworm, Eczema), syphilis sores, rash and itching, stomach pain during pregnancy, dysentery, schistosomiasis. gonorrhoea, convulsions, heart failure, oedema, hernia, jaundice, headache, paralysis abortifacient	Leaves
17	*Cassia occidentalis* Linn syn. *Senna occidentalis* (L) Link	Negro coffe	Adengugu hi oweyi	Agbo ọmẹkpa	Reere/Papala-omode/Asun-undegbe	Caesalpiniaceae		Treats liver problems, asthma, bronchitis; menstrual problems, tuberculosis, anaemia, gonorrhoea, urinary tract disorders, constipation in babies, wounds, expels worms, reduces fever and inflammation and as analgesic	Leaves, flowers, roots and seeds
18	*Chamaecrita mimosoides* (Linn) Greene			Ẹrẹ - Ọkọ	Kotodiyo /Kalefimise	Caesalpinoiideae	Shrub	Treats swollen stomach and dysentery among children	Stem and leaves
19	*Cochlospermum plachonnii* Hook. f.	False cotton plant		Ichachafolo	àwọ̀ òwú; àwọ	Bixaceae	Shrub	Treats malaria, gonorrhoea, jaundice, wounds dysentery, diarrhoea, gastrointestinal problems, broken bones, palpitations, used as an anti-venom, diuretic, control menstruation.	Leaves, root

20	*Crassocephalum* rubens Moench			Ichokolo	Ebolo/Ebubule	Asteraceae	Herb	They are given to women after childbirth for their laxative effect; they are used as a treatment for stomach-ache; liver-complaints; colds, burns, sore eyes and to remove filarial parasites from the eye, earache, leprosy and breast-cancer. It is used as an antidote against any form of poisoning.	Leaves
21	*Crinum jagus* (Thomps) Dandy			Ẹbiẹ - Ọfu	Isumeri/ Ogede-odo	Amaryllidaceae	Herb / Bulb bearing	Remedy for dysentery	Root/bulb and leaves
22	*Cymbopogon citratus* (DC.)Stapf	Lemon grass	Avi tii/ avi tihe	Ẹliẹ / Iliẹ	Koko-oba/Koriko-oba	Poaceae	Grass	Used as Anti cold, anti-cough and anti-malaria	Leaves
23	*Datura innoxia* Mill	Thorn apple		Jẹkẹmi	Apaka/Apikan	Solanaceae	Herbs	Treats rabid dog bite, poisonous insect bite, fever, catarrh, insanity, piles, ulcers, impotency, cardiac disorder, skin diseases, baldness and as antispasmodic	Leaves, seeds and roots
24	*Desmodium mauritianum* (Willd.) DC	Stick tight	Avi uto	Igbaligba – okolo		Fabaceae	Herb	Migraine/ head – ache	Leaves
25	*Desmodium salicifolium* (Poir.) DC			Ekpolo		Papillonoideae	Herb	Used for Skin infection and kwashiokor	Leaves and stem
26	*Desmodium velutinum* (Willd.) DC	Stick tight	Avi uto	Ema	Aberodefe/Emo/Amo	Papillonoideae	Shrub	Used to treat stomach disorder	Leaves
27	*Digitaria horizontalis* Willd.	Crab grass		Egbe Aicha	Eeran/Arifan	Poaceae	Grass	Remedy for scorpion poison	Leaves
28	*Diodia scandens* S. W			Ikanabadudu		Rubiceae	Herb	Used to Treat sickle cell anaemia	Stem and leaves
29	*Dissottis erecta* Guill & per (Dandy)			Okwula – ajochu	Apeji/Ajalugborogan	Melastomataceae	Herb	Remedy for stomach disorder in children	Whole plant
30	*Chromoalaena odorata* (L) King & H. E. Robins	Siam weed	Avi Awo	Abilẹwa	Awo / Akintola	Asteraceae	Shrub	Used as Anti fever, treatment of cuts	Leaves
31	*Euphorbia heterophylla* Linn	Milk weed		Egbe tafọdu	Egele	Euphorbiaceae	Herb	Treats typhoid fever	
32	*Euphorbia hirta* Linn	Asthma herbs	Ireruku/Ire vuku	Ẹnya–akpe /Omiaku ikede	Emile/Orosapo	Euphorbiaceae L	Herb	Treats dengue fever, skin diseases, snake bites, asthma. Root decoction is also beneficial for nursing mothers deficient in milk problem and Gastro – intestinal among children,	Leaves and roots
33	*Fadogia agrestis* Schweinf			Ẹtanyukana		Rubiaceae	Herb	Remedy for Infertility among men	Leaves
34	*Gladiolus quartinianus*			Ukpẹku		Iridaceae	Herb	Treating gonorrhoea, dysentery and other infectious conditions	Corm
35	*Gomphrena celosioides* Mart	Bachelor button	Izọmẹtẹ		Ipopo-ale	Amaranthaceae	Herb	Treats asthma and dermatitis, menstrual pain and improves orgasm	Whole plant
36	*Guntenbergia nigriana* (Berth) Olive & Hiern			Abejugbin igbini		Compositae	Herb	Treats dysentery especially in children	Stem and leaves

37	*Heliotrope indicum* Linn	Heliotrope			Oriugun/ Apari-igun/Arapari	Boraginaceae	Herb	Treat heat rash, diarrhoea, red eyes, asthma, inflammations, diabetes, ulcers, venereal diseases, stomach ache boils, dysentery, bronchitis, infected gums wounds, insect bites and skin problems (scabies, eczema and impetigo) and used as an analgesic to ease rheumatic pain, diuretic purgative and abortifacient. They are used to control menstrual blood loss.	Whole plant
38	*Hyptis sauvolens* Poit	Bush mint	Avi ọpari	Egbe - imu	Jogbo/ Arunfofo	Labiatae	Herb	Scare mosquitoes from the house	Leaves
39	*Imperata cylindrical* (L) P. Beaux	Spear grass	Anchi	Iwọ	Eekan	Graminae	Grass	Used to treat Gonorrhoea and painful menstruation	Leaves and rhizomes
40	*Laportea aestuans* Linn	Nettle weed			Fiyafiya/ Orofa	Urticaceae	Herb	Treats oedema, fever, ulcers, headache, syphilis, swellings, minor eye infection stomach ache, bed wetting, haemorrhages, filariasis, rheumatism, dysentery, gonorrhoea, constipation	Leaves Whole plant
41	*Mentha arvensis L*	Minth		Achęfa / achafa		Labiatae	Herb	Remedy for tooth decay	Stem
42	*Mimosa pudica* linn	Sensitive plant	Shagadawu kwokwoọbanyi	Uchokudu	Patanwo/ Aluro	Fabaceae /Mimosoideae	Herb	Treats wound, piles, ulcers, diarrhoea, diabetes, anti-venom	Leaves, root seeds, whole plant
43	*Mitracarpum scabrum* Zucc	Tropical gridle pod	Avi agwu	Ajęňwu – Onegumę	Irawo – Ile	Rubiaceae	Herb	Treatment of Eczema and other fungal skin diseases	Leaves
44	*Paullinia pinnata* Linn			Egwbiọmę kpa	Kakasenla	Sapindaceae	Climber / twiner	Treats stomach ache especially among children	Stem and leaves
45	*Pergularia daemia* (Forskal) Chior		Omu avuta		Ijoyun/ Ese-alufa	Ascepinadaceae	Climber	Treats jaundice, liver problem, insect bites, Headache, urinary tract problems, severe stomach pain, boils, sore eyes, abscesses, wounds, cold, aching teeth, snakebites, worm infections, eczema, backache, liver problems, bronchitis, fainting, diarrhoea, dysentery, cough, tetanus, rheumatism, malaria, asthma appendicitis, arthritis, muscular pain, rheumatism, amenorrhea, venereal diseases and remove thorns from the skin, used, facilitate child-birth, and as an abortifacient.	Leaves Latex Root

46	*Perquentina nigriscens* (Afzel.) Bullock		Emanya	Ukpakẹlẹ ẹdọ		Asclepiadaceae	Herb	Chronic dysentery, blood tonic, boosts fertility in female, aphrodisiac.	Leaves Roots
47	*Phyllanthus amarus* Schum and Thonn	Stone breaker	Avi ọgẹrẹma	Ogumanej uọgba	Ashansha	Euphorbiaceae	Herb	Remedy for skin infection among children, Fever	Leaves
48	*Phyllantus muellerianus (O. Ktze.) Exell*		Okoruna	Ọganana	Iranje	Euphorbiaceae	Shrub	Remedy for fever and stomach disorder	Leaves
49	*Physalis angulata* Linn			Ikpakpele/ Ukpakpele	Pagboje/ Koropo/ Eleti	Solanaceae	Herb	Malaria, toothache, liver problem, hepatitis, rheumatism, gonorrhea, fever, as diuretic	Whole plant
50	*Scadoxus multiflorus* (Martyn) formerly *Haemanthus multiflorus* Martyn	Fire ball lilly		Iloji - Ichẹkpa	aréyínkosùn /totó odò	Amaryllidaceae	Herb	Treating ulcers or serious wounds, hookworm, and earache, as topical frictions to weakly children. Dried bulb is rubbed over scarification on the breasts to promote milk-flow.	whole plant
51	*Senna obtusifolia* L. Irwin & Barneby			Idagbofifi	Akorere	Caesalpinioideae	Herb	Treatment of chronic dysentery	Leaves
52	*Sida acuta* Burm. F.	Sida	Irehunọ	Ẹfa	Oseporu/ Esoketu	Malvaceae	Herb	Remove pus from boils, facilitate placenta expulsion after delivery	Leaves
53	*Striga hermonthica*		Irera oragu	Uga		Scrophulariaceae	Herb	Blood tonic, jaundice, leprosy ulcer and pneumonia	Leaves
54	*Synedrella nodiflora* Gaertn				Apawofa /Olukoti/ Ogbugbo	compositeae	Herb	Treat stomach aches, epilepsy, rheumatism, hiccup, cardiac, problems, headaches, earaches, threatened abortion, wound healing, and to stop bleeding.	Whole plant
55	*Tridax procumbens* Linn.	PWD Weed	Avi ozoga	Abojigbini gbini	Eekule	Compositae	Herb	Remedy for stomach ache, stomach ulcer, convulsion in children and hypertension,	Leaves
56	*Vernonia perrotteti* Sch. Bip			Adẹnẹgbulu	Jedi	Asteraceae	Herb	Remedy for skin disease among children	Whole plant
57	*Walteria indica* Linn			Achifu	Imi omo/Epa - esure/Kori-kodi	Sterculiaceae	Herb	Remedy for sore throat	Leaves and root

Tropical plants have been used for medicinal purposes since the evolution of man. Many of these tropical plants are used to treat and cure a wide variety of diseases. The accumulation of knowledge of plant used is passed on from generation to generation. It is the primitive people of all ages that were having knowledge of medicinal plants, which they acquired as a result of trial and error (Plotkin, 1995). This knowledge is still alive and several hundred species are used in herbal remedies in indigenous system of medicines, where the whole plant or plant part or its extraction is used. The first step of ethnobotany is collecting detailed knowledge about the local and indigenous people (Plotkin, 1995). A total of 50 people were interviewed. Of the 50 respondents, 35 (70%) were women and 15 (30%) were men; 7 (14%) were aged 20-30 years, 15 (30%) were between 31-40 years, 24 (48%) were in the age range 41-50 years, 4 (8%) were above 50 years. In relation to how knowledge in herbal medicine was acquired, 48 (95%) of the informants acquired the knowledge either from their

friends, parents and grandparents, while 2 (5%) of them acquired their knowledge either by themselves or from dreams.

Elderly people above 40 years were mainly involved in herbal practice, comprising 56%. These findings are in agreement with Daime (2010) who observed that only a few healers were below 40 years. While traditional healing methods continue to be well used, several young people's knowledge of them is diminishing fast, as certain plants disappear from the environment and the older practitioners die, taking their specialist knowledge with them without passing it to younger generations. Plotkin (1995) argued that modernisation contributes to the fast eroding and corroding or even at times, total disappearance of such precious knowledge. It is however important to point out that the situation might improve since more youth (44%) are now involved in practicing herbal medicine as realized from this study. Pei (2005) pointed out that traditional medical knowledge and practices are passed orally from generation to generation. This unwritten guideline or mode of information transfer is, however, grossly inadequate as it lacks continuity. This implies that, with every specialist that dies without an apprentice, the great medical knowledge base of his culture dies with him. Other causes for the rapid disappearance of this knowledge are adoption of global products, especially by younger people, extinction of species, urbanization and destruction of habitat, breakdown in traditional structure and certain natural causes like famine, flood, and wars (Daime, 2010). This suggests that ethnobotanical knowledge can be best obtained from the indigenous people who use plants or have something to do with plants constantly or more often.

A wide variety of plant parts were used for medicinal purposes and reports of the dominant parts are mixed. In this study, the most frequently employed plant parts were leaves (68, 47%) followed by the roots/ rhizomes (28, 20%). The least used are the flowers, corm or bulbs (2, 1%), respectively. Generally, the preparation of remedies was in the form of infusions or decoctions, juice or oil extract, poultice, paste and powdering. Some applications were prepared with a mixture of other plants and ingredients. The preparations were mainly taken orally or by enema. Dried and fresh plant materials were used mostly but in a few cases, either fresh or dry forms would be used simultaneously. Most of the plants used for skin infections are ground to paste or the juice is extracted out and administered on the affected parts. However, the practice of exploiting plant parts, such as roots and stems of the various species can result in a decline of both the size and distributions of populations of exploited plants species and ultimately result in local extinction of these populations (Durugbo *et al*. 2012). It could therefore be said that the period of harvesting plant material as well as the availability of the plant part may affect the plant part used in herbal preparations. This indicates that when a certain plant part is not available, the population collects another part of the same plant or an entirely different plant for the same purpose.

Conclusion

Plants that are termed weed may not actually noxious and useless, rather considering the findings above those plant species termed as weed can be put into useful ways; that is, taking care of various health challenges in the society and improving the economic situation of the nation considering the business potentials of these plant species.

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