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UTILIZATION OF MEDICINAL PLANTS AS INFLUENCED BY SOCIO-ECONOMIC STATUS OF RURAL DWELLERS IN SELECTED LOCAL GOVERNMENTS IN IBADAN

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Abstract

The study was designed to investigate the utilization of medicinal plants as influenced by the socio - economic status of the rural dwellers in Onipe and Laaniba villages at Oluyole and Akinyele Local Government Areas in Ibadan, Oyo State, Nigeria. Many medicinal plants today either face extinction or loss of genetic diversity; hence, posing a great threat. The medicinal plant plays a vital role in the society as regard to the health maintenance of the people, especially the rural dwellers. Sixty structured questionnaires were administered in the study areas. However, a total of fifty-one were retrieved. Data were collected from household heads. Fifty six different medicinal plants species were identified for curing different ailments using different plant parts. The data collected were analyzed using descriptive statistics and Chi-square test was also adopted. The study further revealed that there was a significant relationship between the utilization of medicinal plant and the socio - economic status of respondents. The study therefore recommends that the conservation and domestication of these valuable medicinal plant species should be a priority to prevent their extinction and ensure their sustainability to their preferred users.

Key Words: *Medicinal plants, Utilization, Socio-economic, Rural dwellers, Local governments*

Introduction

Medicinal plants are essential components of primary health care, especially for rural communities who for geographical and economic reasons cannot access modern Western medical services. The World Health Organisation (WHO 2012) estimates the world population relying on traditional medicines for their primary health care to be four billion people, 80% of whom coming from developing countries (Augustino and Gillah, 2005; Schippmann *et al.,* 2006). High reliance on traditional medicines may be attributed to a low ratio of university-trained doctors to rural residents. Statistics indicate that in Sub-Saharan Africa, the ratio of traditional

healers and medical doctors to patients is approximately 1:500 and 1:40,000 respectively (Richter, 2003). The prominence of medicinal plants is increasing globally. Data indicate that between 1991 and 1998, the 12 countries importing the most medicinal plant material paid over US $1 billion to import 343,000 t, while the 12 most exporting countries earned over US $640 million from export of 282,000 t (Lange, 1998). The top three exporters of medicinal plants in the world were China, India and Germany, which exported 139,750; 36,750 and 15,050 t, respectively. The three leading importers [with tonnage shown in brackets] were Hong Kong (73,650 t), Japan (56,759 t) and the USA (56,000 t) (Lange, 1998). The US National Cancer Institute identified over 1400 tropical forest plants with the potential to fight cancer (WCMC, 1992). *Catharanthus roseus*, native to Madagascar, is one such plant, which has been used for generations by traditional healers and is now an important raw material for drugs effective against Hodgkins lymphoma and other forms of cancer (WCMC, 1992).

Furthermore, we often hear that farmers or villagers need plants and this is true. But it should be remembered that they already grow and use plants, we need to learn more about their methods of using medicinal plants. Using their valuable indigenous knowledge in combination with scientific knowledge of utilization of medicinal plant, the researchers, extension agents and government officials can work more effectively with the rural poor to improve their livelihood and their lives (Augustino and Gillah, 2005).

The aim of the present study is to investigate the utilization of medicinal plants by the rural people and also to assess whether or not the socio - economic status of the villagers influenced their choice or preference for the plant use.

Materials and Methods

Study Area

The study was conducted in two local Local Government Areas; Akinyele and Oluyole of Ibadan, Oyo State Nigeria. Akinyele Local Government Area has an area of 518km and a population of 105, 594 males and 106,217 females (NPC, 2006). Its geographic coordinates are 7°23′47″ and longitude 3°55′0″ E (Efenakpo *et al*., 2011). Its climate condition is tropically dominated by rainfall pattern from 1400mm to 1500mm, with average temperature of about 26° C with two distinct seasons of wet (April to October) and dry (November to March). It is surrounded by the natural vegetation of the rain forest.

The second study area is Onipe which located at Oluyole Local Government Area in Oyo State. Oluyole Local Government Area falls between latitude 7° 25′ and 7° 55′ N and longitude 3° 53′ and 3° 90′ E. The climate is well defined dry and wet seasons. The rainfall starts from May to July with a short dry spell period of August and relative humidity of about 60 to 80 percent which fluctuates during January and February (www.researchgate.net). The soil and geology: The soil particle size distribution classification ranged from sandy clay loam to sandy loam with the presence and formation of the argillic horizon. The natural vegetation of the study area is rain forest.

The study was conducted in two rural communities in two Local government areas in Ibadan, Oyo State: Laaniba, at the

International Institute of Tropical Agriculture (IITA) Forest Reserve, in Akinyele Local Government Area, and Onipe, at the Onigambari Forest Reserve in Oluyole Local Government Area, both in Oyo State, Nigeria. It covers the utilization of medicinal plants as influenced by socio - economic status of the rural dwellers in Ibadan.

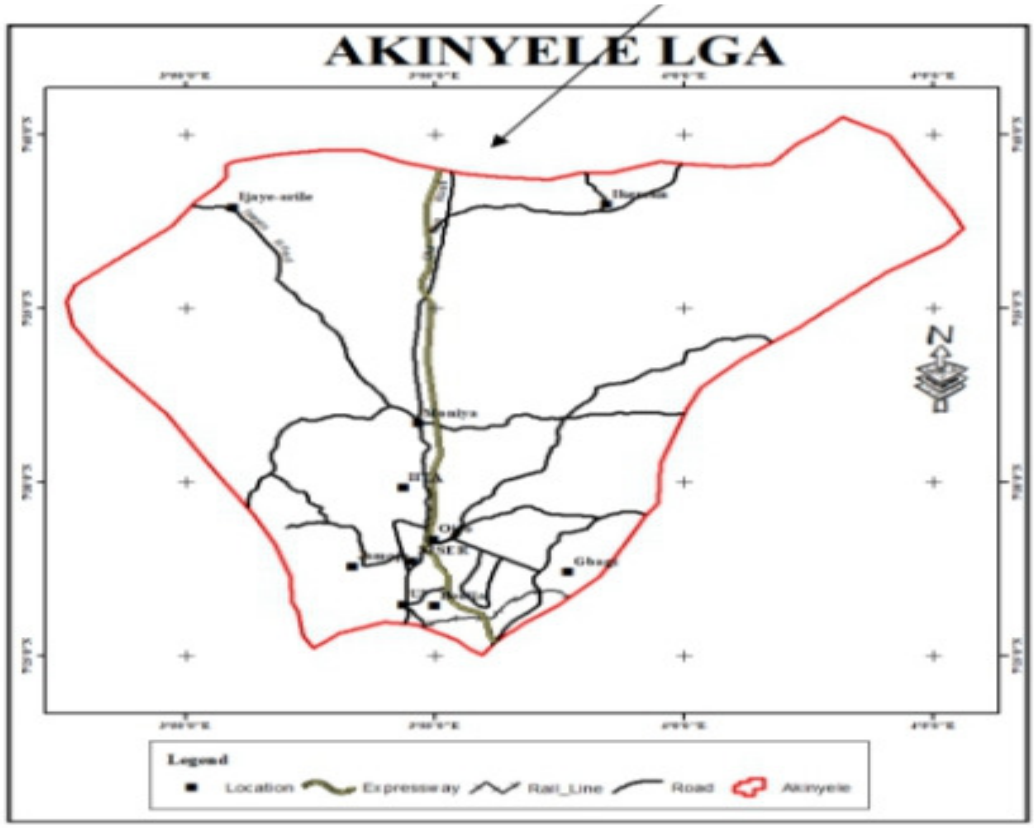

Fig. 1: Map of study area

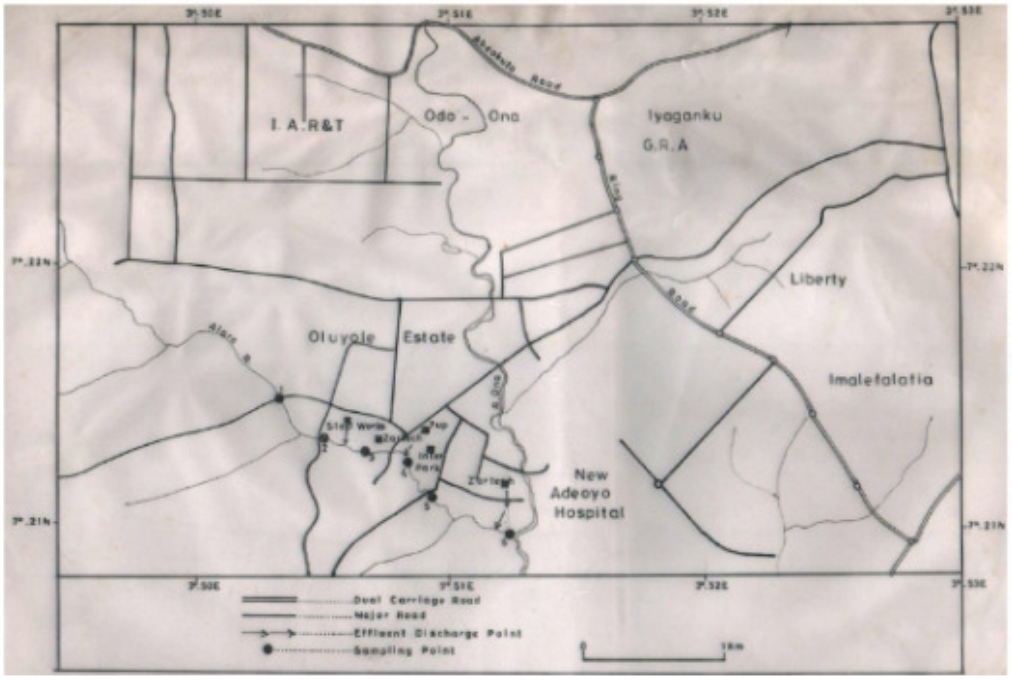

Fig 2: Map of the study area

Extract Map of Akinyele and Oluyole Local Government Areas Showing the Study Areas. (Source: www. Researchgate. Net.

Sampling Method

The sampling was carried out through random selection of thirty households from each of the areas under study. The population of the villages for the year 1991 were gotten from the National Population Commission of Oyo State and from this, a projection of 2021 population of each village was done.

Source and Type of Data

Primary data were obtained with the aid of sixty well - structured questionnaire and unstructured interview. The questionnaires were structured to capture data on: background, medicinal plant usage and socio-economic status, preferred medicinal plant species, specific uses and their methods of usages in the study Area. Households (family heads) were interviewed. The villagers' Socio-economic status was categorized as high, medium or low based on some group of wealth indicators which include: Type of house, Access to mass media, Type of transport use, Sizes of farm land, Level of income and Financial stress.

Analytical Techniques

The study employed analytical tools based on its stated objectives. The analytical tools include descriptive statistics; using frequencies and percentages. Also, Chi-square (x^2) test was carried out to investigate the dependency relationships between household socio - economic status and medicinal plants usage.

Results and Discussion

Socio-economic Characteristics of the Respondents

Table 1 shows that the background of the respondents which include: sex,

marital status, family size, education status, occupation and duration of being in the village influenced utilization of medicinal plant in the study areas. The table 2 below reveals the villagers' socio - economic status. It indicates that 64.7% of the respondents lived in Hut while 35.3% lived in houses. 52.9% lived in houses made up of either wooden or straw materials, 27.5% lived in houses made up of mud bricks while 19.6% lived in houses made with cement block materials. 45.1% of the respondents had sizes of farm land less than 5ha, 37.3% had 5-10ha, 9.8% had no farm land while 7.8% had sizes of farm land greater than 10ha. Other studies from these authors (Michon and de Foresta 1996; Moshi 1997; Ndomba, 2004) have also reported the positive correlation between farm size and utilization of medicinal plants

Table 2 also reveals that 43.1% of the respondents earned monthly income of less than #50,000.00, 29.4% earned between #50,000.00 and #100,000.00. While 27.5% of the households interviewed earned above #100,000.00 monthly. In terms of the financial stress of the respondents, the study reveals that 58.8% had no enough money to spend after expenses each month, 21.6% had just enough money to spend while only 19.6% of the households interviewed had extra money, after expenses at the end of each month, Therefore, the study shows that 50.7% of the households interviewed were into the category of low socio - economic status, while 30% and 19.3% belongs to the categories of medium and high socio - economic status respectively. Hence from the above indications, it can be further deduced that larger population of the households interviewed are into the category of low socio - economic status. This is in accordance with the American Psychological Association (2020) which states that living in mud or straw houses, lack of access to mass media, low incomes, lack of adequate transport system; are all indicators of low socio - economic status. Besides, though the medicinal plants were naturally effective and useful; there are also some socio - economic factors being identified as contributing factors for the preference of the use. These factors include low level of education, low income, easy accessibility of medicinal plants species, type of occupation (i.e. farmers who frequently interact with the plants) and traditional belief system. This is confirmed by the studies of this authors; (Kingazi *et al*., 2008)

The table 3 shows significant relationship between socio - economic characteristics of the respondents and the utilization of medicinal plants in the study area. It was observed from the findings that the gender is significantly related to how they use medicinal plants available in the study areas. This finding is supported by (Chingonikaya *et al*., 2004) who discovered from their study that gender had significant influence on utilization of medicinal plants. It was also evident from the table that the age, family size, occupation, education and marital status of the respondents are significantly related to how they utilize medicinal plants. More men are involved in the utilization of medicinal plants. Most of the respondents that found medicinal plants useful to them are married, above 60 years of age and had no formal education and they are farmers and with family size of above 9.

From the table 4 it was discovered that a total of 56 preferred medicinal plant species were identified in the study area.

The villagers tend to prefer the species that are available in their immediate environment. Generally, the preferred species were used as medicine and food. These findings agree with the observation by (Kingazi *et al*., 2008) that forest serves as multitude of products which feature in people's day-to-day living. It was also observed that some of the species can be obtained all the year round. A major indicator of the species preference is the local availability. The methods of usage discovered from the study were decoction, infusion, maceration, and some were also shewed in the mouth while others were rubbed or applied directly on affected body parts for healing. More so, the common ailments cured are identified as cancer, malaria, typhoid, cough, infertility, convulsions, epilepsy, gonorrhea, toothache, sleeplessness, hypertension, anemia, rheumatism, cholera, skin disease, stroke, snake bites, diabetes, wound cuts, sore, etc. This is supported by the study of (Msuya 1998; Augustino and Gillah, 2005) who indicated that medicinal plants are used as effective medicine for ailments such as hernia, cancer and neck ache etc.

Table 1: Background Information on Respondents

Background Information	**Frequency**	**Percentage**
Sex		
Male	44	86.3
Female	7	13.7
Marital Status		
Married	36	70.6
Divorced	5	9.8
Widowed	10	19.6
Age		
21-30	5	9.8
31-40	9	17.6
41-50	10	19.6
51-60	12	23.5
Above 60	15	29.4
Family Size		
1-3	8	15.7
4-6	12	23.5
7-9	14	27.5
Above 9	17	33.3
Educational Status		
No Formal Education	19	37.3
Primary Education	12	23.5
Secondary Education	16	31.4
Tertiary Education	4	7.8
Occupation		
Farming	22	43.1
Hunting	13	25.5
Fishing	2	3.9
Trading	5	9.8
Forest Guard	3	5.9

Civil Servant	6	11.8
For how long have you been living in the village		
1-5	2	3.9
5-10	3	5.9
10-15	9	17.6
15-20	10	19.6
Above 20	27	52.9

Table 2: Villagers Socio-economic Status

Villagers socioeconomic status (high, medium and low)	**Frequency**	**Percentage**
Type of house lived		
House (high).	18	35.3
Hut (low).	33	64.7
Type of material used for housing		
Cement block (high).	10	19.6
Mud brick (medium).	14	27.5
Wood or straw (low).	27	52.9
Size of farm land		
<5ha (low).	23	45.1
5-10ha (medium).	19	37.3
>10ha (high).	4	7.8
Transportation use		
Private Car (high).	7	13.7
Motorcycle or public transport (medium).	21	41.2
Bicycle (low).	23	45.1
Access to mass media information in the household		
Television only or plus radio (high)	6	11.8
Radio only (medium).	14	27.5
None (low).	31	60.8
Average monthly income		
<#50,000 (low).	22	43.1
#50,000-#100,000 (medium).	15	29.4
> #100,000 (high).	14	27.5
Do you have extra money at the end of the month?		
Had more than enough money to spend (high).	10	19.6
Had just enough money to spend (medium).	11	21.6
Not have enough money to spend (low).	30	58.8

Table 3: Relationship between the Utilization of Medicinal plants and the socio - economic status of the Respondents.

Variables	**Pearson Chi-square value**	**DF**	**Asymptote sign.**
Gender * Utilization	34.110	4	0.000*
Age * Utilization	51.000	16	0.000*
Family size * Utilization	42.500	12	0.000*
Occupation * Utilization	115.836	20	0.000*
Education * Utilization	49.318	12	0.000*
Marital status * Utilization	80.750	8	0.000*

Note: * - Significant at 5% level of probability

Table 4: Preferred medicinal plant species, specific uses and their methods of usages in the study Area

S/no	Scientific name	Local name	Category	Specific uses(s)	Plant part(s) used	Method of usage
1	*Euphobia lateriflora*	Enu opiri	Herb	Whitlow	Latex	Applied on infected part
				Skin disease	Leaf	Mixed water & bath
2	*Bridelia ferruginea*	Ira	Tree	Typhoid	Bark	Juice & drink
3	*Momodica charantia*	Ejinrin, Ogbole-oja	Climber	Pile	Leaf	Mixed with water & drink
4	*Jatrova curcas*	Botuje pupa	Shrub	Ease of woman labour,	Leaf	Mixed with water & drink
				Gonorrhea	Leaf	Mixed with water & drink
5	*Alchornea cordifolia*	Isin	Shrub	Cough	Fruit	Chewed to treat cough
6	*Jatropha curcas*	Lapalapa funfun	Shrub	Preventing miscarriage	Leaf	Mixed with local chalk & drink
7	*Cuscuta australis*	Omisinmisin, Oju-ologbo		Cough	Leaf	Chewed
8	*Telfara occidentalis*	Ugu	Climber	Improve blood level	Leaf	Mixed with malt drink
9	*Chromolaena odorata.*	Ewe Akintola	Shrub	Malaria, Diarrhoea	Leaf	Soaked with & drink
10		Abo idofun	Herb	Diabetes	Leaf	Soaked with & drink
11	*Ageratum conyzoides*	Imi-esu	Herb	Stop minor wound bleeding	Leaf	Extract liquid from leaf
				Prevention of measles	Leaf	Boil the whole leaf & bath baby with water
				Female infertility	Leaf	Mixed with lime water & drink
12	*Bixa orellana*	Laali	Crop	Eczema	Leaf	Extract juice and rob
				Malaria	Leaf	Boil with lime & overnight maize water & drink

13	*Aframomum melegueta*	Atare	Herb	Stomach ache	Seed	Powdered and mixed with palm oil
14	*Spondias mombin*	Aka, Akika	Tree	Menstrual pain relief	Root	Boil and drink
15	*Citrus aurantifolia*	Orombo (osan wewe)	Shrub	Gonorrhea	Fruit	Boil & drink
				Malaria		Soak in water & water
				Stop Vomiting		Extract fruit juice and drink
16	*TetracarpidiumTetracarpidiumconophorum conophorum*	Awusa (walnut)	Climber	Aid digestion	Fruit	Extract juice and drink
				Stomach ache		Boil & drink
				Snake bite		Cook and eat
17	*Funtumia elastica*	Ireke	Herb	Malaria	leaf back	Boil and drink
18	*Zea mays*	Agbado	Herb	Measles	Inflorescence	Boil and drink
19	*Rauvolfia vomitoria Afzel*	Asofeyeje	Herb	Pile & back ache	Leaf	bark mix
20	*Calotropis procera*	Bomubomu	Herb	Measles	Leaf	soak in water & water
				Boil	Latex	Applied on infected part
				Tooth ache		applied aching tooth
21	*Croton lobatus*	Eru		Gonorrhea	Fruit	decoction of fruit
			Herb	Skin disease		grind the fruit & mix with cream & apply
22	*Crinum jagus*	Ogede odo		Convulsion	Bulb	decoction with fruit
			Herb	Asthma		soak with water & alum
23	*Cymbopogon citratus*	Koriko-oba	Herb	Malaria	Leaf	Boil the leaves, fruit of lemon
24	*Citratus stapf*	Eweti		Yellow fever		
25	*Bambusa vulgaris*	Oparun (bamboo)	Shrub	Hypertension	Leaf	Boil leaf and drink
				Malaria		Boil with limon and drink
26	*Parquetina nigrescens*	Ogbo	Climber	Blood tonic	Leaf	Mix with water & milk & drink
27	*Musa paradisiaca*	Ogede Agbagba	Herb	Diabetes	Fruit	Unripe fruit is cook and eaten
				Men impotence	Fruit	Unripe dried fruit is grinded and mix with cold pap
28	*Moringa oleifera*	Ewe igbale, Moringa	Tree	Syphilis	Root	Decoction of fruit of limon and potash

				First aid	Stem back	Dried and powdered with local chalk and alcohol & drink
29	*Securidaca longipedunculata*	Ipeta	Tree	Diabetes	Root	Powdered & swallowed
30	*Sansevieria senegambica*	Akogun	Herb	Diarrhea	Leaf	Mixed with water & drink
31	*Azadirachta indica*	Dongoyaro	Tree	Malaria	Leaf, Bark	Mixed alcohol & drink
				Dandruff, kill lice	Leaf	Used to wash the head
				Skin disease	Seed	Juice applied on the skin
32	*Mangifera indica*	Mangoro	Tree	Malaria	Bark, Leaf, Stem	Boiled & soaked in fermented maize water & drink
33	*Bryophyllum pinnatum*	Ewe Abamoda	Herb	Cough	Leaf	Boiled with salt water & drink
34	*Newboldia laevis*	Ewe akoko	Tree	Yellow fever	Leaf	Boiled with lime
35	*Kigelia africana*	Pandora	Tree	Convulsion	Fruit	Boiled & drink
				Dizziness		Dried root grinded & mixed with palm oil
36	*Aspilia africana*	Agbo yunyun	Herb	Diabetes	Leaf	Soaked in water & drink
37	*Bidens pilosa*	Molaganran, Tamolaganran	Herb	Rheumatism	Leaf	Boiled & drink
38	*Alstonia boonei*	Ahun	Tree	Malaria	Bark	Boiled & drink
39	*Amarantus spinosus*	Efo tete	Herb	Children teething	Leaf	Leaf paste mixed local soap & use to bath children
40	*Anacardium occidentale*	Kashu	Tree	High blood pressure	Seed	Boil with water & drink
41	*Theobroma cacao*	Cocoa	Shrub	Blood tonic	Leaf	Boiled & drink
42	*Jatropha multifida*	Ogege	Shrub	Wash coated tongue	Leaf	Used to wash tongue
43	*Elaeis guineensis*	Oil palm	Tree	Convulsion	Fruit	Drink kernel oil
				Neutralize poison		Drink palm oil
44	*Carica papaya*	Pawpaw	Shrub	Typhoid	Leaf	Mixed with 7up
45	*Grewia venusta*	Orogbo	Tree	Cough	Fruit	Chewed in the mouth

46	*Jatropha gossypiifolia*	Botuje pupa	Shrub	Ease of woman labour,	Leaf	Mixed with & drink
47	*Vitex doniana*	Aku, oori-nla	Tree	Hernia	Root	Boiled root with potash
48	*Saccharum officinarum*	Ireke	Tree	Typhoid	Bark	Lime juice and drink
49	*Caladium bicolor*	Eje jesu	Herb	Stomach ulcer	Leaf	Socked with fermented maize water & drink
50	*Anthocleista vogelii*	Sapo-sapo	Tree	Pile	Root	Boiled with eyin-olobe
				Malaria	Bark	Boiled & drink
51	*Citrus limon*	Lemon	Shrub	Gonorrhea	Fruit	Boiled & drink
				Digestion		Soaked in water & drink
				Malaria		
				stop vomiting		
52	*Tetrapleura tetraptera*	Aridan	Tree	Stoke	Seed	Dried, grinded, & mixed with cold pap
				Cough	Leaf	Mixed water & alum
53	*Aloe vera*	Ahon erin	Tree	Malaria	Bark	Boiled & mixed with palm wine to drink
				Measles		Mixed with alcohol & on body
54	*Adenopus breviflorus*	Taagiiri	Shrub	Measles	Fruit	Boiled with of ew akoko & drink
55	*Ceiba petandra*	Owu cotton	Shrub	Malaria	Leaf	Boiled & drink
				Blood tonic		Boiled with leaf of lemon orange & drink
56	*Citrullus lanatus*	Egusibaara	Climber	Gonorrhea	Fruit	Boiled with lime & potash with eeru & pineapple
					Leaf	Mixed with alcohol & drink

Conclusion

This study shows that the rural dwellers in the study area uses medicinal plants for their health care needs. However, though the medicinal plants were naturally effective and useful; there are some socio - economic factors being identified as contributing factors for their preference for their use. These factors include low level of education, low income, easy accessibility of medicinal plants species, occupation and traditional belief system.

Some of the prevalent diseases in the study area are malaria, typhoid, gonorrhea, cough, measles, male/female reproductive challenges, convulsions, diabetes, snake bites, toothache, hypertension, infertility, cholera, skin disease, etc. Moreover, despite the massive drive by government for the improvement in rural health delivery services, the use of medicinal plants by the rural dwellers in the maintenance of their health is still significant.

Recommendations

The following recommendation must be put into consideration.

1. The state forestry department should explore the possibilities of introducing community forestry initiatives in the rural areas of the state by establishing necessary incentives and guidelines, this can be through the provision of land for the cultivation of medicinal plants species and provision of seedlings. This will help for its sustainability.
2. The rural dwellers should be adequately trained on the effective use of the medicinal plants so that the medicinal plants species will not be under-utilized or be abused. This can be achieved by the intervention of the State Ministry of Health to collaborate with the rural dwellers.

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