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Ethnobotanical Survey of Medicinal Plants Used in Treating Viral Infection in Saki West Local Government Area, Oyo State, Nigeria

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ABSTRACT

Most indigenous people have acquired expertise in the use of medicinal plants, but information on the utilization of the medicinal plants are poorly documented. Thus, this study deals with the ethnobotanical survey of medicinal plants used in treating viral infections in Saki West Local Government Area, Oyo State. Data was collected using structured questionnaires and oral interviews to acquire information from selected members of Saki West Local Government Area. A total of sixty (60) structured questionnaires were given randomly to respondents in the selected villages in the study area. Data were analyzed using descriptive statistics. The finding shows that the majority of the respondents were females (61.7%). Moreover, 50 % of the respondents were from the age group of 31 to 40 (also the largest group). In addition, a majority (88.3%) of the respondents were married, and only a few (16.7%) had no formal education. Furthermore, the major occupation of the respondents was herb selling (35.0%). The findings on the various plant parts utilized for herbal medicine indicated that the leaves, stem bark and whole root were the most commonly used parts. Most of the respondents also prepared herbal medicine by decoction. What is more, oral ingestion (drinking) was found to be the most (70.0%) preferred mode of administration in the study area. Finally, the major problem encountered while acquiring medicinal plants was wild animal threat. This work indicated that there is a need for an ethnobotanical survey in every state of the nation on the medicinal plants used in the treatment of viral infection.

Keywords: ethnobotanical survey, herbs, medicinal plant, viral infection

1. INTRODUCTION

Indigenous medicine is now known globally both by the rural populace and the urban dwellers as a vital healthcare resource. There are considerable economic benefits in the development of indigenous medicine and in the use of medicinal plants for the treatment of various diseases [1]. Plants have provided the basis for traditional treatment for different types of diseases and still offer an enormous potential source of new chemotherapeutic agent [2]. Therefore, it is essential for drugs discovery to preserve and record traditional know-how on medicinal plants and in most cases, this depends on local practitioner and field survey [3].

Use of traditional medicine has increased significantly in industrialized countries, due to the fact that many prescription drugs have originated from the tropical flora [4]. Medicinal plants are of great importance to the health of individuals and communities [5]. Indigenous people have long history and expertise in the use of medicinal plants, but information on these plants and their uses is mainly passed from one generation to the other orally and even to date is poorly documented [6]. The main obstacle to the acceptance of traditional medicine in developed countries is the lack of documentation and stringent quality control [7]. The lack of an organized documentation for medicinal plant knowledge may also contribute to the loss of medicinal plant knowledge, particularly for plants that are neglected or non-preferred [8]. Hence, this study deals with the identification and documentation of medicinal plants used in the treatment of viral diseases in Saki West Local Government Area, Oyo State.

2. MATERIALS AND METHODS

2. 1. Study Area

Saki West is a Local Government Area in Oyo State, Nigeria. It is situated at latitude 8.6726°N and longitude 3.3943°E, with maximum temperatures of 30-32 °C. Annual rainfall decreases northward; about 2,000 mm in coastal zone. The vegetation of the area has been described as derived savanna.

2. 2. Data Collection Techniques

Table 1. Selected Villages of Respondents

Villages	Frequency (n = 60)	Percentage (%)
Ataye	10	16.7
Sani sala	15	25.0
Igbo ologun	10	16.7
Tenleke	10	16.7
Olomitutu	15	25.0

Source (Field survey, 2017)

The methods utilized in obtaining the information on plants used in the treatment of viral diseases in the study includes-consulting herbalist, herb sellers, enquiry from villagers and traders about plants/recipes used in the area. Data collected as questionnaires were administered through person to person contact. A total of five villages (Ataye, Sani sala, Igbo ologun, Tenleke and Olomitutu) were selected for this study with respondents ranging from 10 to 15 persons in each village (Table 1). Descriptive statistics was used to analyze the data obtained. The statistics include tables, charts, and percentages.

3. RESULTS AND DISCUSSION

Table 2 shows the socio-demographic characteristics of the respondents. The result gathered shows that the females (61.7%) were more than the males (38.3%). The age 31-40 years recorded the highest (50.0%). Majority (61.7%) of the respondents were Muslims, while only 6.7% practised traditional religion. Majority (88.3%) of the respondents were married, while 6.7% were divorced. 41.7% attended only primary school, while a few (16.7%) had no formal education. The major occupation of the respondents was herb selling (35.0%), followed by trading (26.7%), while herbalist was the least (6.7%).

Table 2. Socio-demographic of the respondents

Gender	Frequency (n = 60)	Percentage (%)
Sex		
Male	23	38.3
Female	37	61.7
Age		
20-30	5	8.3
31-40	30	50.0
51 and above	25	41.7
Educational Status		
Non formal education	10	16.7
Primary school	25	41.7
Secondary school	15	25.0
OND/NCE	7	11.7
HND/University	3	5.0

Marital Status		
Single	3	5.0
Married	53	88.3
Divorced	4	6.7
Religion		
Christianity	19	31.7
Islam	37	61.7
Traditional	4	6.7
Occupation		
Farmer	10	16.7
Herb seller	21	35.0
Trader	16	26.7
Herbalist	4	6.7
Civil servants	9	15.0

OND/NCE: National Diploma/ Nigerian Certificate in Education; HND: Higher National Diploma
Source (Field survey, 2017)

Table 3. Use of herbs as medicine in the study area

Factor	Frequency (n = 60)	Percentage (%)
Yes	53	88.3
No	7	11.7

Source (Field survey, 2017)

Table 3 indicated that majority (88.3%) of the respondents made use of herbs as medicine in the study area, while only few (11.7%) claimed they do not. The various plants used in treating some common viral diseases in the study area, their local names, botanical names and common names are presented in Table 4.

The various plant parts utilized for herbal medicine in the study area are represented in Table 5. Fig. 1 shows the mode of preparation of herbal medicine in the study area, it indicated that majority (76.0%) of the respondents prepared herbal medicine by decoction, while the least (2.0%) prepared it by pounding and extracting respectively.

Table 4. Plants Used In the Treatment of Viral Diseases

S/N	Local name	Botanical name	Family name	Common name	Parts use	Medicinal use(s)
1	Buba awodi	<i>Capparis thoningii</i>	Capparaceae	Capper Bush	Leaves	Chickenpox, Measles
2	Odundun	<i>Bryophyllum pinnatum</i>	Crassulaceae	Life Plant	Leaves	Measles
3	Laali	<i>Lawsonia inermis</i>	Lythraceae	Henna Tree	Leaves	Poliomyelitis, Measles
4	Ayu	<i>Allium sativum</i>	Liliaceae	Garlic	Bulb	Poliomyelitis
5	Orogbo	<i>Garcinia kola</i>	Guttiferae	Bitter Cola	Roots	Smallpox
6	Yanrin	<i>Lactuca virosa</i>	Compositae	Wild Lettuce	Stem Bark	Poliomyelitis
7	Igba Parkia	<i>Parkia biglobosa</i>	Leguminosae	Neoul Iol	Stem Bark	Chickenpox, Measles
8	Rerinkomi	<i>Argyrea nervosa</i>	Convolvulaceae	Elephant Creeper	Leaves	Chickenpox
9	Eeru	<i>Xylopi aethiopica</i>	Annonaceae	Ethopia Pepper	Fruit	Chickenpox, Measles
10	Iyeye	<i>Spondias mombin</i>	Anacardiaceae	Yellow Mombin	Stem Bark	Chickenpox, Jaundice
11	Osan jagan	<i>Citrus aurantifolia</i>	Rutaceae	Lime	Leaves, Fruit	Measles
12	Osun	<i>Pterocarpus spp</i>	Leguminosae	Blood Wood	Stem Bark	Poliomyelitis
13	Owu	<i>Gossypium arboreum</i>	Malvaceae	Western Idian Cotton	Leaves	Hepatitis
14	Ibepe	<i>Carica papaya</i>	Caricaceae	Pawpaw	Leaves	Jaundice
15	Ato	<i>Chasmanthera dependens</i>	Menispermaceae	Chasmanthera	Leaves	Poliomyelitis
16	Osan wewe	<i>Citrus aurantifolia</i>	Rutaceae	Lime	Leaves	Measles
17	Tagiri	<i>Adenopus breviflorus</i>	Cucurbitaceae	Pseudclocyth	Fruits	Measles
18	Ira	<i>Bridelia atroviridis</i>	Euphorbiaceae	Ira	Leaves	Jaundice
19	Uja	<i>Ehretia cymosa</i>	Boraginaceae	Puzzle Bush	Leaves	Poliomyelitis, Measles
20	Afomo	<i>Crudia klainei</i>	Loranthaceae	Mistletoe	Leaves	Measles
21	Feregede	<i>Cajanus cajan</i>	Leguminosae	Pigeonpea	Flower	Measles
22	Akomu	<i>Pycnanthus angolensis</i>	Myristiaceae	Wild Nutmeg	Roots	Chickenpox

23	Ayinyin	<i>Trema orientalis</i>	Ulmaceae	Charcoal Tree	Leaves	Chickenpox
24	Ojere agbado	<i>Zea mays</i>	Poaceae	Maize	Flower	Chickenpox
25	Iyere	<i>Piper guinensise</i>	Pepereceae	Climbing Black Pepper	Leaves	Chickenpox
26	Aluro	<i>Mimosa pigra</i>	Mimoceae	Catclaw Mimosa	Leaves	Poliomyelitis
27	Eriru	<i>Xylopi aethiopica</i>	Annonaceae	Ethopia Pepper	Fruits	Measles
28	Itaye	<i>Aframomum melegueta</i>	Zingiberaceae	Alligator Pepper	Leaves	Measles
29	Casu	<i>Anacardium occidentale</i>	Anacardiaceae	Cashew	Leaves	Jaundice
30	Oparun	<i>Bambusa vulgaris</i>	Poaceae	Bamboo	Leaves	Measles
31	Erinje	<i>Xylopi aethiopica</i>	Annonaceae	Ethopia Pepper	Fruit	Measles
32	Ewe were	<i>Momordica charantia</i>	Curbitaceae	Bitter Cucumber	Whole Plant	Yellow fever
33	Ataile	<i>Zingiber officinale</i>	Zingiberaceae	Ginger	Rhizome	Yellow fever
34	Gilofa	<i>Psidium guajava</i>	Myrtaceae	Guava	Stem Bark	Jaundice
35	Mangoro	<i>Magnifera indica</i>	Anacardiaceae	Mango	Stem Bark	Jaundice
36	Dongoyaro	<i>Azadirachta indica</i>	Melicaceae	Neem Tree	Stem Bark	Jaundice
37	Ahun	<i>Alstonia boonei</i>	Apocynaceae	Pattern Wood	Leaves	Jaundice
38	Egbesi	<i>Naucleae latifolia</i>	Rubiaceae	Naucleae	Roots	Jaundice
39	Opon	<i>Tetracera pototoria</i>	Dilleniaceae	Cup Of Water	Stem Bark	Jaundice
40	Ponhan	<i>Lophira alata</i>	Onchnaceae	Meni Oil Tree, Iron Wood	Stem Bark	Jaundice
41	Oganwo	<i>Khaya ivorensis</i>	Meliaceae	African Mahogany	Stem Bark	Jaundice
42	Odan	<i>Ficus thonningii</i>	Moraceae	Umbrella Thorn	Leaves	Jaundice, Measles
43	Ewedu	<i>Corchorus olitorius</i>	Tiliaceae	Jute Plant	Whole Plant	Measles
44	Erinje	<i>Xylopi aethiopica</i>	Annonaceae	Ethopia Pepper	Seeds	Chickenpox
45	Tagiri	<i>Lagenaria breviflorus</i>	Cucurbitaceae	Psuedoclocynth	Whole Plant	Measles
46	Rere	<i>Senna occidentalis</i>	Leguminosae	Africa Coffee	Leaves	Measles
47	Oruwo	<i>Morinda lucida</i>	Rubiaceae	Brimstone Tree	Roots	Yellow fever
48	Taba	<i>Nicotiana tabaccum</i>	Solanaceae	Tobacco	Leaves	Poliomyelitis

49	Jogbo	<i>Hyptis pectinata</i>	Lamiaceae	Hiptis	Leaves	Poliomyelitis
50	Aba	<i>Symphonia globulifera</i>	Guttiferae	Hog Gum Tree	Roots	Poliomyelitis
51	Arin	<i>Dioclea reflexa</i>	Leguminosae	Bull's Eye	Seeds	Measles
52	Alubosa elewe	<i>Allium ascalonicum</i>	Liliaceae	Shallt Spring	Leaves	Chickenpox
53	Imi-esu	<i>Agerantum conyzoides</i>	Compositae	Goat Weed	Whole Plant	Poliomyelitis, Measles, yellow fever
54	Tee	<i>Cymbopogon citrates</i>	Theceaea	Tea	Leaves	Jaundice
55	Afara	<i>Terminalia superb</i>	Combretaceae	Korina, Frake	Stem Bark	Yellow fever
56	Roro	<i>Allanblackia floribunba</i>	Guttiferae	Fallow Tree	Leaves	Chickenpox, Measles
57	Ewuro	<i>Vernonia amygdalina</i>	Compositae	Bitter Leaf	Leaves	Jaundice
58	Osan wewe	<i>Citrus aurantifolia</i>	Rutaceae	Lime	Leaves	Jaundice
59	Orombo wewe	<i>Citrus aurantifolia</i>	Rutaceae	Lime, Swing	Leaves	Chickenpox
60	Ifon	<i>Olox subscorpioidea</i>	Olacaceae	Olax, Stinkant Forest	Roots	Poliomyelitis

Source (Field survey, 2017)

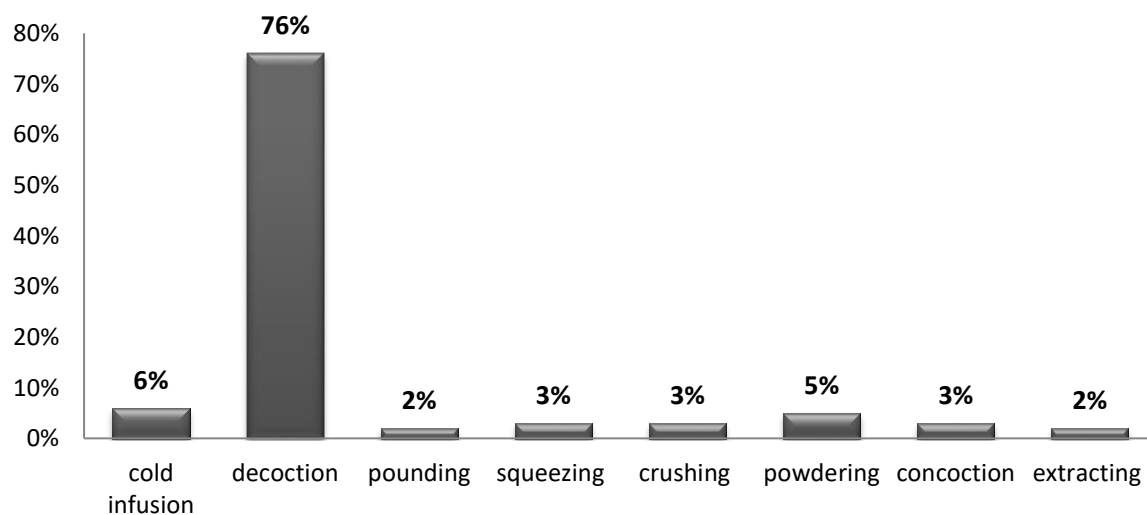


Fig. 1. Mode of preparation of herbal medicine in the study area

Source (Field survey, 2017)

Fig. 2. shows the mode of administration in the study area, oral ingestion (drinking) was found to be the most (70.0%) preferred mode of administration, followed by bathing (12.0%),

while auricular/ear administration was less frequently employed. Table 6 shows the location where medicinal plants were acquired in the study area, it indicated that most (60.0%) of the medicinal plants were obtained in the forest, while 40.0% were obtained around their houses (homegarden).

Table 5. Plant parts used for treating viral infections

Parts used	Frequency (n = 60)	Percentage (%)
Bulb	1	1.6
Flower	2	3.3
Fruit	5	8.3
Leaves	29	48.4
Root	6	10.0
Rhizome	1	1.7
Seed	1	1.7
Stem bark	11	18.3
Whole plant	4	6.7

Source (Field survey, 2017)

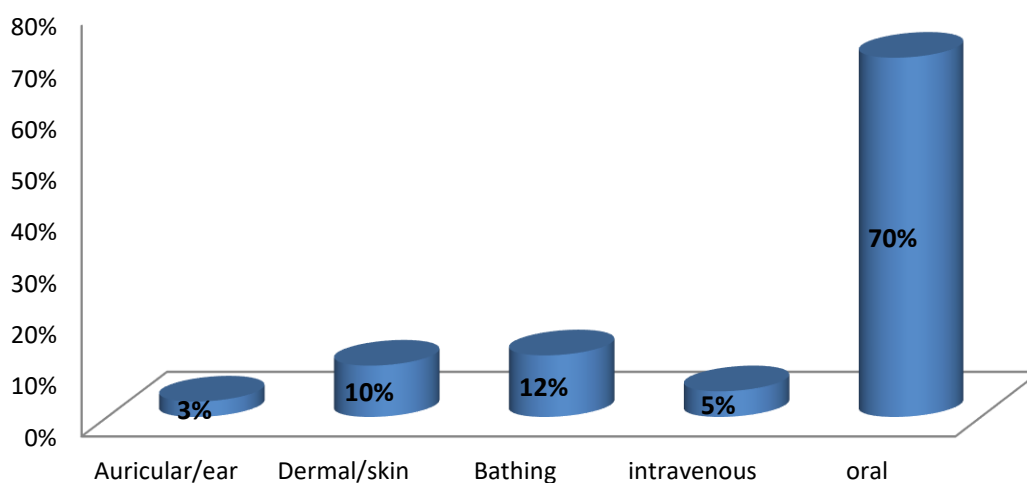


Fig. 2. Mode of administration

Source (Field survey, 2017)

Table 6. Location where medicinal plants are acquired in the study area

Factors	Frequency (n = 60)	Percentage (%)
Home gardens	24	40.0
Forest	36	60.0

Source (Field survey, 2017)

Table 7. Side effects in the use of herbal recipes

Factors	Frequency (n = 60)	Percentage (%)
Excessive intake causes vomiting	40	66.7
Excessive intake causes purging	10	16.7
Stomach upset	5	8.3
None	5	8.3

Source (Field survey, 2017)

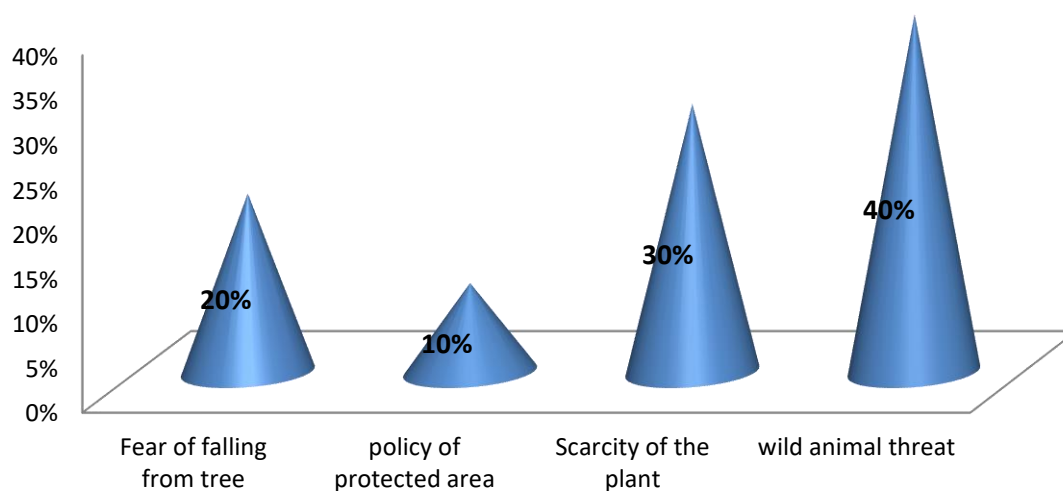


Fig. 3. Problems encountered while acquiring medicinal plants

Source (Field survey, 2017)

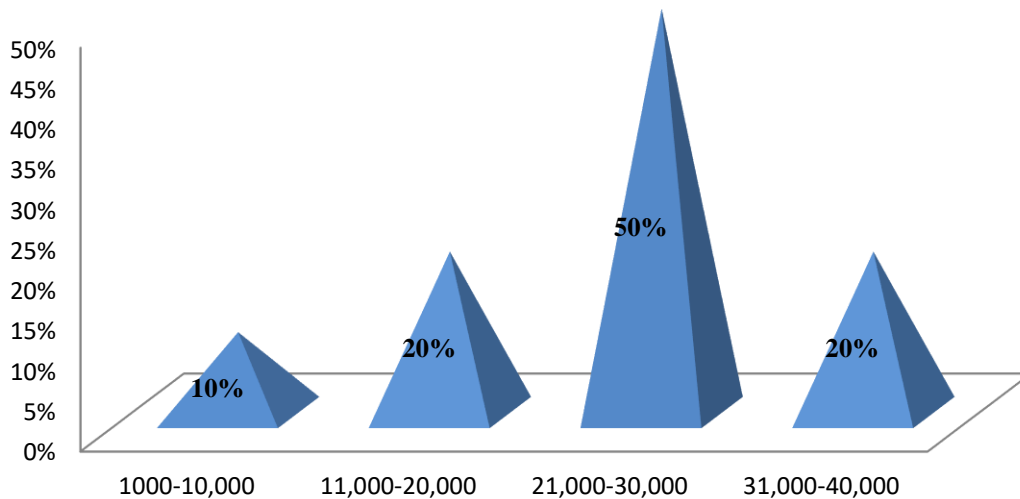


Fig. 4. Income generated monthly trough sales of herbal medicine (N)
Source (Field survey, 2017)

Table 7 shows the side effects in the use of herbal recipes. Majority (66.7%) of the respondents complained that excessive use of herbal medicine caused vomiting, while few (8.3%) of the respondents disagreed. Fig 3 shows the problems encountered while acquiring medicinal plants, majority (40.0%), mentioned of wild animal threat among the problems. Fig 4 indicated that majority (50.0%) of the respondents made between N21, 000-30,000 per month, through the sale of herbal medicine.

4. DISCUSSION

In this ethnobotanical survey, 60 medicinal plants from 35 families and their uses in treating some common viral infections were reported. This demonstrates the depth of the knowledge of the people of Saki West Local Government Area, Oyo State on medicinal plants and their uses. This study like various studies before has shown that different areas in different parts of the world have considerable amount of indigenous ethno medicinal knowledge [9]. Responses from the respondents showed that herbal preparation was up-held only by the herb sellers. This was due to lack of interest from the community people as a result of easy access to modern drugs and health education.

This study revealed that most knowledge on herbal remedies is handled by the grown-up members of the community between 31-40 years and >50 years of age. This hits at the fact that ethnomedicinal knowledge is limited to a particular section of the community, and there is relative difficulty in its transfer from the elderly to the younger generation. This might be related to the waning of interest of the young generation on indigenous knowledge. Different studies in different areas showed that medicinal plant knowledge and transfer of knowledge to the young generation have been affected by modernization and environmental change [10].

This research work revealed that the plant leaves were most commonly used for medicinal purposes in the study area. This was followed by the use of stem bark, root, fruit, whole plant, flower, bulb, rhizome and seed. Many studies conducted in different parts in Ethiopia and many parts of the world showed that plant leaves are used more than the other parts of a plant. This practice helped to reduce the rate of threat on plant species [11]. Decoction and cold infusion were the most common mode of preparation. Oral ingestion (drinking) was the major route of administration, depending on the type of viral infection treated. This finding is in agreement with previous studies by [12] and [8] which also revealed that oral ingestion is the most frequently used route of administration in traditional medicine. The major problem encountered while acquiring medicinal plants was wild animal threats.

The study revealed that excessive intake of herbal medicine causes vomiting, probably because of the lack of knowledge and information on the dosage of some herbal medicine. According to [9], it is commonly believed that traditional practitioners either do not know the strength of their own medicines or do not bother to fix doses to the size or body weight of the patients [13-25].

5. CONCLUSION AND RECOMMENDATIONS

5. 1. Conclusion

The study revealed that there were high diversity of medicinal plants and traditional knowledge about the utilization, preparation, and administration of plants in the study area. However, the knowledge of herbal medicine was up-held by the grown-ups in the society. The decline in the use of plants by the younger generation may gradually lead to the fading away of indigenous knowledge associated with the plants. The study also revealed that, most of the herbal medicines were prepared by means of boiling it, while most of the herbal medicines were utilized by drinking.

5. 2. Recommendations

Based on the findings of this study, it is therefore recommended that;

- It is important to publicize medicinal plant knowledge within the younger generation to raise awareness of and appreciation for their cultures and for the conservation and sustainable use of the plants as well as to keep the traditional medical knowledge alive in various communities.
- Government should provide a global forum for growers, traders, manufacturers of herbal medicines and professionals in the field of traditional and alternative therapies to share knowledge, experiences and ideas.
- There is a need for an ethnobotanical survey to be carried out in every state of the nation on medicinal plants used in the treatment of viral infection, in order to preserve knowledge on medicinal plants and to update existing information.

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