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Evaluation of herbal drugs used to treat fungal and bacterial diseases in Mbeere, Eastern Kenya

Amadi Everlyne Kareji**Abstract**

Investigation of traditional medicine for treatment of typhoid, pneumonia and candidiasis in Mbeere, Eastern Kenya was documented. Oral and written interviews were obtained from twenty herbalists aged between 25 to 80 years of both genders. Most of the herbalists did the treatment as their full time job which they had carried on from their fore fathers. They had no clinic but worked from their homes charging small fee for the services. The herbalists' interviewed were Christians and had average formal education. A decoction of the herb was recommended for treatment of the patients. Typhoid, pneumonia and candidiasis were the commonest diseases found in the area treatable with a total of 5, 4 and 4 plants respectively. *Acacia mellifera*, *Osyris abyssinica* and *Senna didymobotrya* were the most used plants for treatment of typhoid, pneumonia and candidiasis respectively.

Keywords: Herbal drugs, Decoction, Herbalists, Diseases.**1. Introduction**

Medicinal herbal drugs play a key role in health especially in the developing countries such as Kenya. Herbal medicines are used to treat common diseases such as typhoid, pneumonia and candidiasis currently due to the fact that they are cheaper, available and are believed to present lesser side effects. Herbal medicines have been used by billions of people around the world for thousands of years to treat various diseases^[1]. According to WHO, traditional medicine can be defined as including diverse health practices, approaches, knowledge and beliefs incorporating plant, animal and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illnesses. Herbal drugs are unprocessed part of plant (whole plant) while herbs include crude plant materials such as flowers, leaves, fruit, seed, stem, wood, roots or other plant parts which may be entire, fragmented or powdered^[2]. Actually, more than 80% of the population within developing countries relies on the use of herbal medicines for their primary healthcare due to their lower cost and time tested nature^[3]. Medicinal plants have also been very vital in the development of conventional medicine; about 25% of the conventional medicine is derived from plants^[4]. "Health for all" is a goal and a dream which is shared and strived for by humanity at large. Unfortunately, it has now been proven without doubt that modern pharmaceuticals are and will remain out of reach for a large proportion of the human population in the foreseeable future. This renders the herbal and alternative medicines very strategic in use for disease prevention and health promotion as has been advocated for by WHO since 1970s in recognition of this fact^[5].

2. Method

Ethnobotanical data was collected from twenty herbalists both men and women practicing in the study area. The selection of the herbalists was based on their willingness to give voluntary information. The indigenous knowledge was collected using Participatory Rapid Appraisal (PRA) which involved driving around to the identified herbalists. Written interviews through questionnaires and oral interviews were carried out. Intellectual property rights was observed when obtaining the information from the traditional herbalists especially on identification of the plant species used in preparation of the herbal drugs. The ethno botanical information of these medicinal plants was given when the herbalists revealed the particular medicinal plants

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employed in the preparation of each formulation. With strict adherence to the ethical issues of intellectual property rights of the herbalists, the identity of the plant materials used to prepare the herbal drugs and specific plant parts (roots, stem, seeds or leaves) was sought. Medicinal plant specimens used for various diseases was first identified by the herbalists in the field, and then authenticated by a plant taxonomist from Jomo Kenyatta University. They were labeled immediately with the correct botanical name and given voucher specimen numbers. Data obtained from interviewing the herbalists through the questionnaires issued to them and oral interviews was analyzed and the results obtained were as shown.

3. Results and Discussion

The questionnaire and oral interview results are provided in Tables 1 to 5.

Table 1: Bio-Data of the interviewees

Age	Male	Female
25-35		2
36-45	3	3
46-55	3	4
56-65	3	
Above 65	2	

Total number of interviewee's = 20

Table 2: Livelihood of the interviewees

Occupation	Length of Practice	Clinic		Charge	
Full-time job	30 years	NO	2	YES	5
Part-time job	10-25 years	NO	18	YES	15

Table 3: Knowledge of plants used for treatment of Pneumonia

Name of plant	Plant species	Part used	Frequency	Ranking
Muthira	<i>Acacia mellifera</i>	Back	20	1
Mucatha	<i>Vernonia lasiopus</i>	Roots, Back, Leaves	20	1
Kithunju	<i>Aloe ballyi</i>	Leaves	20	1
Mucigara	<i>Uvaria scheffleri</i>	Roots, Back, Leaves	20	1
Mukumbi	<i>Abrus schimperi</i>	Roots, Back, Leaves	20	1
Murangare	<i>Acacia ataxacantha</i>	Roots, Back	18	6
Mwokia	<i>Zanha africana</i>	Roots, Leaves	18	6
Kigurugua	<i>Commiphora africana</i>	Roots, Back, Leaves	17	8
Mugirimura	<i>Vernonia brachycalyx</i>	Back, Leaves	17	8

Mixture of parts boiled in water and then drunk. Ranking: 1= commonly used; 8= least used

Table 4: Knowledge of plants used for treatment of Pneumonia

Name of plant	Plant species	Part used	Frequency	Ranking
Muthithi	<i>Osyris abyssinica</i>	Roots, Back, Leaves	20	1
Munjuga-iria	<i>Clerodendrum myricoides</i>	Roots, Leaves	20	1
Murava	<i>Combretum molle</i>	Roots, Leaves	20	1
Kirurite	<i>Tithonia diversifolia</i>	Back, Leaves	20	1
Muthathi	<i>Clausena anisata</i>	Roots, Leaves	18	5
Cong'e	<i>Oxygonum sinuatum</i>	Whole plant	17	6
Mutotoo	<i>Dombeya rotundifolia</i>	Back, Leaves	15	7
Murembu	<i>Ehretia cymosa</i>	Roots, Back	15	7
Kiruma	<i>Aloe lateritia</i>	Roots, Leaves	12	9
Mwiria	<i>Prunus africana</i>	Roots, Back	11	10
Mukambura	<i>Dovyalis abyssinica</i>	Seeds, Roots	10	11
Mwonge	<i>Periploca linearifolia</i>	-----	-----	12

Individual parts are boiled in water and drunk. Ranking: 1= commonly used; 12= least used

Table 5: Knowledge of plants used for treatment of candidacies.

Name of plant	Plant species	Part used	Frequency	Ranking
Mwinu	<i>Senna didymobotrya</i>	Leaves	19	1
Mukorwe	<i>Albizia gummifera</i>	Back, Roots	18	2
Mucii	<i>Leucas mollis</i>	Roots, Leaves	12	3
Gatukia	<i>Emilia discifolia</i>	Leaves	10	4

Decoction from boiled parts applied on the body. Ranking: 1= commonly used; 4= least used

4. Discussion

The analysis of the data indicated that most people seek treatment from herbalists because they offer medicines that are cheap and does not cause side effects. All the herbalists learned the treatment from relatives especially older in age. These information is stored in human pharmacopoeia and hence the need for documentation for posterity and rapid disappearance of herbalists due to old age. They use the available plant parts such as leaves, roots and backs of trees. Herbalists prepare by boiling the parts and then the decoction given to the patients to drink or apply to the infected parts.

Medicinal plant species were ranked according to how frequent they were used to treat the diseases as show in Table 3 to 5.

5. Conclusion and recommendation

There are many herbal medicinal products in Kenyan markets today which are used in treating various ailments. Herbalists prescribe and administer herbal drugs which are polyherbal in the treatment of pneumonia, typhoid and candidiasis. Characterization and evaluation of the herbal drugs is necessary so as to establish the dosage of the medicine for

proper treatment. This can be done by determining the efficacy of these herbal medicines through biological *in-vitro* assay screening, their LD₅₀ and the therapeutic doses can be obtained and compared to those of conventional drugs. Qualitative and quantitative analysis of phytochemicals present in the solvent extracts and their efficacies can be determined. The marker compounds in the drug preparations can be identified and quantified by employing HPLC and TLC techniques, and can also be obtained by isolating some pure compounds from the plant materials used to make the drug preparations. Further evaluation of the products can be accomplished by employing appropriate fingerprinting methods which include FT-IR, UV, TLC, HPLC and LC techniques.

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