International Journal of Pharmaceutical Science and Research
ISSN: 2455-4685, Impact Factor: RJIF 5.28
www.pharmacyresearchjournal.com
Volume 1; Issue 3; March 2016; Page No. 23-26

An Ethnomedicinal survey of Ayurvedic plants used by the folk practitioner at Kondokpur village in Bhola district Bangladesh

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Abstract

Background: Plants are an integral part of life in various communities. In modern science, new drug design and for vaccination gradually depends on natural ayurvedic formulation of medicinal treatment by treating folk practitioners in the rural area. In Bangladesh, there are various rich sources of natural medicinal plants which are so much effective various ailments. Folk medicine forms the primary tier of health-care practices in Bangladesh. The objective of this study was to document the medicinal uses of plants by a folk medicinal practitioner (Kaviraj) at Kondokpur Village in Bhola district, Bangladesh.

Methods: The field work was conducted during April – August 2015. Data was collected by interview with randomly selected 95 informants and Traditional Health Practitioner (THP) living in the study area.

Results: The Kaviraj (folk practitioner) used 10 plants distributed into 10 families in his formulations. The formulations were used to treat diverse diseases like gastrointestinal disorders, skin disorders, pain, fever, burns, infertility, diabetes, jaundice, diarrhea, stomach pain, inflammation, dysentery, tuberculosis, asthma and cuts and wounds.

Conclusion: The present study revealed that some of the well-known medicinal plants are used an effective ethnobotanical practice in our study area. Moreover herbal plants used by the Kaviraj of Bhola district needs to be scientifically studied towards discovery of useful drugs.

Keywords: Ethnopharmacology, Folk practitioner, Drug design, Uses value, Ethnobotany, Bangladesh

1. Introduction

Ethnobotany is the traditional knowledge of utilizing indigenous plants, such as for food, medicine and tools, that local people have been practicing for a long time [1]. Ethnomedicine refers to the study of ayurvedic plants by traditional practitioners for the treatment of various ailments and throughout the world and still continue their traditional medicinal practices. Medicinal plants are always playing a beneficial function in health care. It is reported that 80% of the peoples in the developing countries strongly depend on ayurvedic practitioners used. In the new era of Biological science, modern medicinal treatment is so advanced but still now, some of the common diseases are successfully treated with the ayurvedic or herbal medicinal treatment by folk traditional practitioners. Traditional medicinal Plants have been used for thousands of years to flavor and conserve food, to treat health disorders and to prevent diseases [4-12]. Various types of medicinal practitioners exist in Bangladesh. Besides allopathic medicinal practitioners, there are numerous forms of traditional medicinal practices which include Ayurveda, Unani, folk medicine, folk herbalists, home remedies, acupuncture and spiritual practices. Folk medicine practitioners known as Kavirajes possibly form the largest group. Kavirajes are not certified practitioners, but who have picked up some or considerable knowledge on disease treatment with natural medicinal plants from personal experiences or knowledge gathered from a close member of an earlier generation of the family for a long time. Traditional practitioners are part-time folk medicinal practitioners. They are usually engaged in some other type of work and practice folk medicine in their personal experiences or knowledge gained from earlier generation of the family. They use medicinal plants in their formulations but also may include animal parts, insects and minerals. Medicinal plants has always formed a valuable source for discovery of modern drugs and their formulation with vaccination [2]. Traditional medicinal plants form the basic cure for numerous diseases in traditional medicinal systems. It has been reported that 422,000 flowering plant species of the world, at least 50,000 are used for medicinal purposes [3]. Natural medicinal Plants produce secondary metabolites with diverse ethno pharmacological activities and which activities are utilized by both traditional health practitioners as well as modern researchers for disease treatment. The objective of the present study was not only to

obtain knowledge on medicinal plants used by Kaviraj at Kondokpur village in Bhola district Bangladesh but also to find out whether differences exist even within village level among practicing Kavirajes as to ailment(s) treated and the medicinal plants selected for treatment of any particular ailment.

2. Material and Methods

2.1. Study area

The present survey was conducted in the village of Kondokpur in Bhola district.

2.2. Medicinal plant survey and data collection

A systematic and extensive ethnobotanical survey was carried out in Kondokpur village of the Bhola district for collection of information on ethnomedicinal plant species being used by the locals in the study area. Information was gathered by conducting interviews and group discussions on the indigenous uses of plant species as medicine. After selecting the people, knowledge about their interests and skills in identification and utilization were obtained through in formal interviews and discussion was made with the informants in their local language for their ease. The objectives of study were elaborated to the informants. A total of 95 informants (55 males and 40 females) between the age group 27–86 years were interviewed with a questionnaire.

Prior Informed Consent was first obtained from the Kaviraj, Belal Hossain, age 35 years, practicing in Kondokpur village of Bhola district, Bangladesh. The Kaviraj was apprised as to the nature of our visit and consent obtained to disseminate any information both nationally and internationally. Actual interviews were conducted in the Bengali language, which was spoken fluently by the Kaviraj as well as the interviewers. The interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method of Martin [13] and Maundu [14]. In this method the Kaviraj took the interviewers on guided field-walks through areas from where he collected his medicinal plants, pointed out the plants, and described their uses. All plant specimens were photographed and collected on the spot, pressed, dried and brought back to Bangladesh National Herbarium at Dhaka for identification.

3. Data Analysis

3.1 Use value (UV)

The relative importance was calculated employing the use-value, a quantitative measure for the relative importance of species known locally:

$$UV = \Sigma U/n$$

Where, "U" is the number of use reports cited by each informant for a given species and "n" refers to the total number of informants. Use values are high when there are many use-reports for a plant, implying that the plant is important, and approach zero (0) when there are few reports related to its use. The use value, however, does not distinguish whether a plant is used for single or multiple purposes [15]. *Justicia adhatoda* (0.03) performs high uses value and others plants uses value are reported as: *Mangifera indica* (0.01), *Rauwolfia serpentina* (0.02), *Alternanthera sessilis* (0.02) has been reported in Table 1. Figure 1, 2 and 3 respectively used Percentage of use in medicinal plants formulation by kaviraj in Kondokpur village, Percentage of use of plant parts and Percentage of use of ethnomedicine in various diseases.

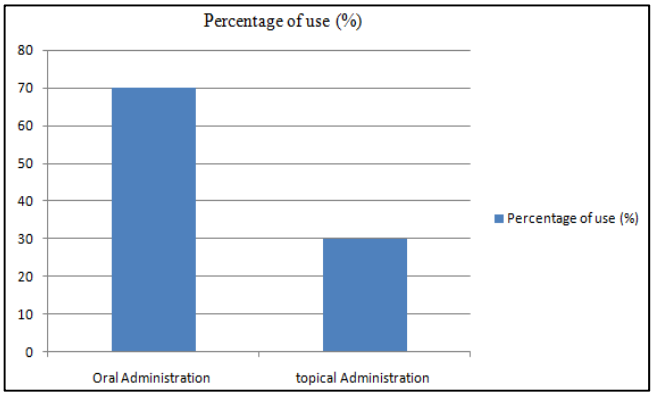

Fig 1: Percentage of use in medicinal plants formulation by kaviraj in Kondokpur village.

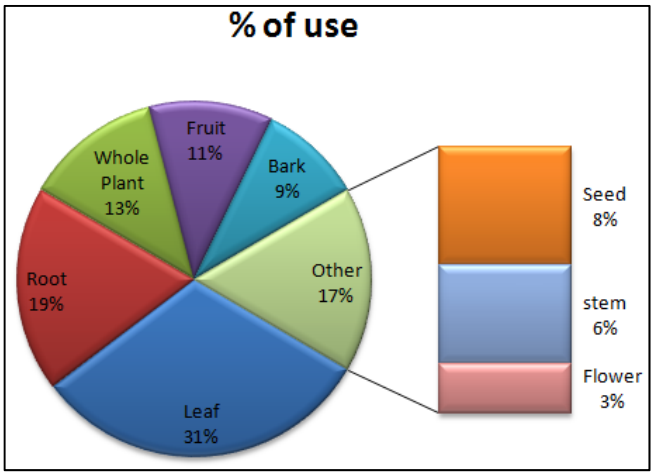

Fig 2: Percentage of use of plant parts.

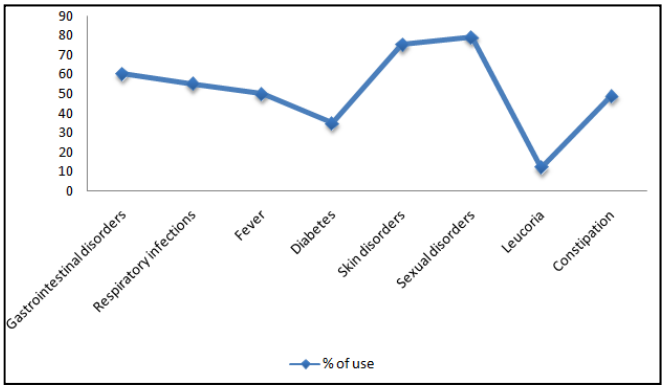

Fig 3: Percentage of use of medicinal plants in various diseases.

Table 1: Medicinal plants and formulations of Kondokpur Village

Serial No.	Botanical name	Family	Local Name	Parts used	Medicinal Uses	No. of ailment reports	Uses value (UV)
1	*Justicia adhatoda* L.	Acanthaceae	Bashok	Leaf	Used in Menstrual problems, Asthma, Jaundice, Hepatitis.	1	0.01
2	*Mangifera indica* L.	Anacardiaceae	Aam	Leaf, Seed	Dysentery, Helminthiases, Liver disorder.	2	0.02
3	*Rauwolfia serpentina*	Apocynaceae	Shorpogondha	Whole plant	Irregular and painful menstruation, women fertility.	1	0.01
4	*Typhonium giganteum*	Araceae	Kala kochu	Leaf, Root	Stop bleeding, kidney stones.	1	0.01
5	*Centella asiatica*	Apiaceae	Thankuni	Leaf	Stomach pain, Blood purifier, Vomiting, anemia, Diarrhea and loss of appetite.	2	0.02
6	*Cocos nucifera* L.	Arecaceae	Narikel	Leaf, Fruit	Keep head cool, Diabetes.	2	0.02
7	*Alstonia scholaris*	Apocynaceae	Chatim	Bark	Ulcer, Diabetes.	1	0.01
8	*Lasia spinosa*	Araceae	Bonadi	Leaf, Root	Joint pain, Edema, Dysentery, Increase lactation.	2	0.02
9	*Areca catechu* L.	Arecaceae	Supari	Seed	Carcinogenic, Toothache, Addictive.	3	0.03
10	*Alternanthera sessilis*	Amaranthaceae	Haicha	Leaf	Gonorrhea, Leucorrhea.	2	0.02

* W=wild; T=Topical; H=Herb; S=Shrub

4. Results

A total of 10 plant species distributed into 10 families were found to be used by the Kaviraj for treatment of various ailments. All parts of the plant were used by the Kaviraj. These included whole plants, leaves, stems, barks, roots, flowers, fruits, seeds, gum, and rhizomes. Leaves constituted the major plant part used (41%), where roots part used (12%), fruits part used (25%). The results are shown in pie chart. The various formulations were used to treat diseases like urinary disorders, oral lesions, diabetes, leucorrhea, pain, gastrointestinal disorders, cuts and wounds, jaundice, helminthiasis, and coughs. The Kaviraj mainly used simple formulations of plant parts in his treatment.

5. Discussion

A total of 10 plants distributed into 10 families were used by the healers. The various ailments that they treated included gastrointestinal disorders, helminthiasis, pain, vomiting, cuts and wounds, malaria, urinary problems, rheumatism, respiratory tract disorders, oral lesions, skin diseases, hair loss, physical weakness, anemia, bone fracture, pox, jaundice, burning sensations in the chest and vaginal infections. The results are shown in Table 1.

6. Conclusion

Finally, it is important to store this traditional ayurvedic medicinal formulation used for various ailments by folk practitioners. To improve the knowledge of medicinal plants and prevent the knowledge-loss, future work documenting medicinal plant identification, formulation and treatment preparation are needed. Recent years, ethno-botanical and traditional uses of natural compounds, especially of plant origin received much attention as they are well tested for their efficacy and generally believed to be safe for human use.

7. Acknowledgments

The authors are thankful to the practitioner Belal Hossain for cooperate our ethnomedicinal survey. Authors are also thankful to all the people of Kondokpur village in Bhola district who shared their ethno pharmacological knowledge. We would like to thank the scientists of Bangladesh National Herbarium (BNH) for extending their help in the identification of the plants.

8. Competing Interests

The authors declare that they have no competing interests.

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