

Ethnobotanical Approaches of Traditional Medicinal Studies

Dr. Sanjay Kumar Acharya

Department of Botany, Govt. Dungar College, Bikaner, Rajasthan, India

ABSTRACT: Ethnobotany, as a research field of science, has been widely used for the documentation of indigenous knowledge on the use of plants and for providing an inventory of useful plants from local flora in Asian countries. Plants that are used for traditional herbal medicine in different countries are an important part of these studies. However, in some countries in recent years, ethnobotanical studies have been used for the discovery of new drugs and new drug development. In general, experiences gained from ethnobotanical approaches of traditional medicinal studies in China and Himalayan countries have helped drug production and new drug development. At the same time, in many cases, over-harvesting, degradation of medical plants, and loss of traditional medical knowledge in local communities are common problems in these resource areas. Issues of indigenous knowledge, intellectual property rights, and uncontrolled transboundary trade in medicinal plants occur frequently in the region. This paper discusses ethnobotanical approaches of traditional medicinal studies, in reference to experiences from China and Himalayan countries, with an emphasis on the conservation of traditional medical knowledge and medical plant resources.

KEYWORDS: ethnobotanical, traditional, medicine, plants, resources, studies

I. INTRODUCTION

The Mediterranean area, which possesses a unique ecology with various natural features, has been inhabited for millennia and is strongly influenced by human–nature relationships (Scherrer et al., 2005). The tradition of using wild plants for medicinal reasons continues in today's small rural communities, especially among societies that maintain the cultural bridge between past and present. While the recently developed fast communication technologies connect people in seconds and spread data across vast distances, traditional knowledge still holds importance in daily life. Over the past few decades, efforts to preserve traditional knowledge have escalated around the world, especially in Europe and Mediterranean countries (Varga et al., 2019).[1,2,3]

Besides being home to many plants in floristic terms, Turkey is rich in traditional herbal medicine, in addition to its cultural, historical and geographical heritage (Bulut et al., 2013). Ethnobotanical studies show that traditional knowledge of medicinal plants still exists in the Mediterranean Region, especially among elderly (Agelet, et al., 2003). Many scientists have focused on such studies and governmental foundations have increased financial support of this kind of research. The Turkish Ministry of Agriculture and Forestry has organized studies across the country in the scope of the "Recording of Traditional Knowledge Based on Biological Diversity Project."

The Taurus Mountains are one of the highlights of the Mediterranean Region with a rich plant diversity (Everest et al., 2005). Mersin has previously been the subject of this kind of scientific research, such as a study on herbal drugs on herbal markets in Mersin, which was conducted throughout the entire province (Everest et al., 2005). Thorough documentation [4,5,6] of the traditional use of medicinal plants across the entirety of Mersin province is not presently available. Three districts (Sargin 2015; Sargin et al., 2015; Sargin and Büyükcengiz, 2019) and some specific areas of the province have been investigated from an ethnobotanical perspective. Another study investigates a small section of the region (Akaydin et al., 2013); however, as one of the largest cities in Turkey, Mersin needs further investigation from an ethnobotanical perspective.

Traditional plant knowledge and uses of medicinal wild plants were investigated among the Marakwet community in Kenya. Data were collected through interviews with seven traditional healers and 157 questionnaires for local

International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management (IJMRSETM)

(A Monthly, Peer Reviewed Online Journal) | Impact Factor: 7.580|

Visit: www.ijmrsetm.com

Volume 7, Issue 2, February 2020

community members. Traditional names of the plants by traditional healers and local community members were prepared as a checklist. Loss of traditional medicinal names of plants was ascertained with up to 60% overlapping in their nomenclature. The traditional medicinal plants treated 41 diseases within the region, of which local community members understood common [7,8,9] ones for treating stomachache (94.8%), diarrhea (70.7%), chest problems (65.5%), and typhoid (63.8%). It was also clear that there was low knowledge index of medicinal plants by the local community members (23.6%) based on knowledge of traditional healers. Clearly, medicinal plants for treatment of malaria, diabetes, tetanus, and pneumonia were recognized by over 40% of the local community members, while plants treating arteriosclerosis, meningitis, arthritis, trachoma, smallpox, rheumatic fever, and gout were known by less than 10% of the respondents. Among plants, the use of roots for treatment was known by over 67% of the local community members compared to fruits, bark, bulb, and flowers (<10%). This low traditional medicinal knowledge in a community relies on the traditional medicinal plants, calling for an urgent need to document the information and perpetuate this knowledge from one generation to another. This can be achieved by collecting the information and developing a database of medicinal plants for future research and potential [10,11,12] development of new drugs

II. DISCUSSION

The use of indigenous plants in human medicine is well documented [1]. Current knowledge on medicinal plants as a source for relief from illness dates back to the early civilization in China, India, and the Near East [2–5]. Ingredients provided by plants have a wide range of medicinal properties [6–9]. Globally, about 60–80% of the people rely on herbal medicine as for primary healthcare needs [10–12]. Subsequently, the number of plants being recommended for use as herbal medicines has increased [13, 14]. In areas where there is perceived high cost of medical care, especially in Asia and Africa, medicinal plants have gained more recognition [15–18]. This stems from the affordability and accessibility of traditional medicine as a source of treatment in the primary [13,14,15] healthcare system of resource-poor communities [19–21]. Therefore, focus on the knowledge of plants used in herbal medicines has been increasing.

It is now clear that knowledge of medicinal plants use as was embedded in indigenous cultures has slowly been eroding with modernization. Thus, over the years, the decline in cultural diversity has witnessed the erosion of human knowledge on medicinal plant species, their distribution, management, and methods of extracting the useful properties of medicinal plants [22]. Knowledge of the use of medicinal plants was derived mainly through traditional scholarly written traditional documentation of knowledge and pharmacopoeias for doctors and institutions, as well as Traditional Medical Knowledge (TMK), among households, communities, and/or ethnic groups. Rather than legislation and/or regulation, it has been suggested that suitable strategies to enhance sustainable utilization and management of medicinal plants are focusing on local approaches involving traditional medicinal knowledge [23, 24].

Most emphasis on the respect and perpetuation of knowledge about the medicinal plants is espoused by traditional medicinal knowledge (TMK). Although there are numerous reports, published work, thesis, dissertations, books, inventories, media reports, and monographs of the diversity of medicinal plants within the tropical environment [25–30], most of these knowledge are still based purely on scientific work that totally excludes the contribution of the local community members and does not reflect TMK. Of interest is that the majority of the works so far carried out in developing countries largely focus on the inventories, utilization, and conservation of medicinal plants [21, 30–35]. Various sets of recommendations have been compiled relating to the conservation of medicinal plants, such as those associated with international conferences at Chiang Mai, Thailand, in 1988 and Bangalore, India, in 1998 (<http://www.frlht-india.org>). Regardless, there is little application of TMK on these inventories.[15]

There is enormous knowledge on the use of indigenous medicinal plants in Kenya over the last decades (e.g., [30, 32, 36–42]). In light of this, therefore, there is a high expectation of enormous traditional knowledge of medicinal plant species in Kenya due to the use of diverse plant species, diversity of cultures, diverse languages, and beliefs among the different ethnic groups in Kenya. To our knowledge, there are no data regarding the traditional medicinal plant knowledge and use by several local communities in Kenya. Moreover, Kenya is one of the countries experiencing dynamic changes in cultural norms and system, which renders the traditional and local knowledge of medicinal plants to be easily forgettable as most of the indigenous traditional knowledge is transferred to the local community members

International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management (IJMRSETM)

(A Monthly, Peer Reviewed Online Journal) | Impact Factor: 7.580|

Visit: www.ijmrsetm.com

Volume 7, Issue 2, February 2020

orally. Therefore, the current study was conducted to assess and document the traditional and local knowledge of medicinal plants and use among traditional healers and local community members in Marakwet, Kenya.

III. RESULTS

The aim of this research is to make a survey of the socio-environmental characteristics and the ethnobotanical study of medicinal plants used in a traditional community in the Brazilian Northeast, Alagoas. The study was made based on visits with the application of a questionnaire with questions related to the socio-economic element and on the diversity of plants used in herbal medicine. The research was made from March/2019 to February/2019, where families and interviewed plant exhibitors were interviewed for botanical identification. The studied community, which were 24 interviewees, was compiled by residents of the Quilombola community from Pau D'arco in Arapiraca city - Alagoas. Residents interviewed, 15 (62.5%) attended between 56 to 80 years, 11 interviewees about 46% were born in the community and 13 (54%) had a fundamentally incomplete nature. At the end, there were mentioned 30 plant species used for phytotherapeutic purposes, from which presents bigger usage as plants against arterial hypertension (*Salvia rosmarinus* Schleid), diabetes Mellitos (*Croton heliotropiifolius* Kunth), pain and inflammation (*Alternanthera tenella* Colla), present the biggest number of species in the community. The species cited are related to numerous medicinal uses, among which there will be predominant associations associated with cardiovascular and inflammatory processes.[12,13] The tea is the main way of preparing plants. It is perceived that medicinal plants are only widely used by this Quilombola community of and growth of the crops in the backyard are considered a tradition.

The use of vegetal species to treat diseases, remote from ancient knowledge, coming from different generations, which incorporates new uses and practices, as the years go by. It is noted to notice that some traditional communities have a wide ethnobotanical field, using plants as raw materials to cure many diseases, in a safe and sustainable manner, in balance with the conservation of the environment (Modro et al., 2015). This knowledge remains present in the national culture; although it is seen that deculturalization has been happening fast and aggressively every day, especially in Quilombola communities.

Traditional Quilombola communities have a huge legacy of caring for the environment and using their natural resources for therapeutic purposes, such as medicinal plants. In this context, emphasizing the definition of Oliveira et al. (2009), to provide knowledge about plants as ethnobotany, he highlights that it is healthy to study the direct interrelationships between human beings and the plant environment, observing that the traditions of a folk says a lot about the way they care for and cultivate the environment around them. In this way, verifying that medicinal plants interact significantly with social, economic, cultural and environmental aspects, reaching the most varied dimensions of sustainability, it opens the way for the use and conservation of ecosystems, besides valuing the culture of traditional communities, reducing negative impacts (Modro et al., 2015).

This cultural heritage, passed down from generation to generation by their descendants, confronts the uncontrolled advance of technology, consumerism, objectivity and speed to solve problems, each day more voracious, help the devaluation of this Quilombola knowledge. Every day more medications appear, which can be easily bought at drugstores, leading, so, people to choose the ease with which they find the medication, weakening and devaluing the use of plants as a cure and/or treatment. It is needed that there is an appreciation of this knowledge, a historical and cultural recovery of these traditions, so that the next generations recognize themselves and appreciate themselves as Quilombola people, taking pride and recognition to keep this legacy alive (Boscolo and Galvão, 2019).

Seeking to maintain tradition and knowledge about medicinal plants conserved by Quilombola communities, the present work aims to a research over the socioenvironmental characteristics and ethnobotanical study of medicinal plants used by a traditional community[14,15] in the northeastern of Brazil, Alagoas.

IV. CONCLUSION

Descriptive statistics and quantitative ethnobotanical indices were used to analyze the data. Moreover, an independent t-test and one-way ANOVA were employed to investigate the effect of Sociodemographic traits on traditional

**International Journal of Multidisciplinary Research in Science, Engineering,
Technology & Management (IJMRSETM)**

(A Monthly, Peer Reviewed Online Journal) | Impact Factor: 7.580|

Visit: www.ijmrsetm.com

Volume 7, Issue 2, February 2020

medicinal knowledge. The study documented 70 medicinal plant species belonging to 61 genera and 36 families. Most plants (83.7%) were used to treat human ailments. Asteraceae (7 species) mainly represented the family. Most of the plants collected were shrubs (32.9 %), followed by herbs (25.7%). Leaves (42.3%) represented the highest part for remedy preparation. The dominant route of administration of remedies was oral (56%). Jaccard's similarity index (JI) showed a high degree of similarities (JI = 0.75-0.91) among three kebeles namely, Imboro, Koba, and Dike. The highest Informant consensus factor (ICF) value (0.73) was detected for the sensory organs category illnesses. *Juniperus procera* Hochst. Ex. Endl. was observed with the highest fidelity level (FL) index value (0.97) for the wound. The highest preference ranking (PR) was adjudged to be *Ruta chalepensis* L. for stomach ache. *Syzygium guineense* (Willd.) DC. was top-ranked as a multipurpose plant in direct matrix ranking (DR). It was observed that the Traditional Knowledge (TK) of medicinal plants was significantly ($P < 0.05$) influenced by the gender, age, and educational level of the people. Therefore, our documentation of TK on medicinal plants possessed by the people of the studied area could help preserve their knowledge for extensive use.

Ethnobotany is the study of medicinal plants used by local people, with particular importance of old-styled tribal beliefs and information. Ethnobotanical studies focus on ethnic knowledge of Adivasi people and development of data bases on ethnic knowledge but also focuses on preservation and regeneration of traditional beliefs and maintenance of traditional knowledge.

The aim of present study is to highlight the traditional actions of herbal plants used by inborn Yanadi community of Seshachalam Biosphere Reserve, Eastern Ghats of Andhra Pradesh, India.

The ethnobotanical field survey was conducted according to the methods adopted by some authors. In-depth interviews, interactions were conducted with tribal physicians of Yanadi, Nakkala and Irula as well as other tribes practicing and experiencing the use of plant-based medicine. A normal inquiry form was used to gather the appropriate data on herbal plants and their usage of inborn people's lifestyle. Extensive consultations among local people and detailed documentation of the usage of plants were carried out in 2014–2017. The aged outmoded opinions and imposts of indigenous people conceded on by word of opening were documented.

A total of 266 medicinally used plant species belonging to 216 genera and 88 families were recognized with help of inborn herbal healers. The study also chronicled the mode of herbal arrangements, ode of the use of herbal plants in various disorders. The study exposed that native people of Seshachalam Biosphere Reserve have good medicinal information and also have preserved plant-based medicinal system of their ascendants used all their diseases. Most of medicinal plants are used in the treatment of indigestion, snake bite and skin diseases. The authors feel that this type of study certainly helps identify ethnic leads for drug development in future.

The ethnobotanical investigation of Seshalam Biosphere area has revealed that the tribes possess good knowledge on plant-based medicine but as they are towards in advanced exposure to transformation, their information on traditional uses of plants is slowly getting eroded. The authors plead for intensive crosscultural studies involving all ethnic tribes in the country for prioritizing or short listing of ethnic leads for various disorders for ultimately developing global level drugs for human welfare and economy development.[15]

REFERENCES

1. Sen S, Chakraborty R. Toward the integration and advancement of herbal medicine: a focus on Traditional Indian medicine. *Bot Target Ther* 2015; 5:33-44.
2. Hemadri K, Sarma CRR, Rao SS. Medicinal plants wealth of Andhra Pradesh. Part 1. *Ancient Sci Life* 1987; 6:167-168.
3. Hemadri K, Sarma CRR, Rao SS. Medicinal plants wealth of Andhra Pradesh. Part 2. *Ancient Sci Life* 1987; 7:55-64.
4. Vedavathy S, Rao KN, Rajaiah M, Nagaraju N. Folklore information from Rayalaseema region, Andhra Pradesh for family planning and birth control. *Int J Pharmacognosy* 1991; 29:113-116.
5. Vedavathy S. Herbal folk medicine of Yanadis of Andhra Pradesh. *Ethnobotany* 1996; 8:109-111.
6. Sudarsanam G, Siva P. Medicinal ethnobotany of plants used as antidotes by Yanadi tribes in south India. *J Herbs Spices Med Pl* 1995; 3(1):57-66.

**International Journal of Multidisciplinary Research in Science, Engineering,
Technology & Management (IJMRSETM)**

(A Monthly, Peer Reviewed Online Journal) | Impact Factor: 7.580|

Visit: www.ijmrsetm.com

Volume 7, Issue 2, February 2020

7. Sudhakar A, Madhava Chetty K. Medicinal importance of some angiospermic weeds used by the rural people of Chittoor district of Andhra Pradesh, India. Fitoterapia 1998; LXXIX–B:17-12.
8. Reddy KN, Reddy CS, Trimurthulu G. Ethnobotanical uses for respiratory disorders in Eastern Ghats. Ethnobotan Leaflets 2006; 10:139-148.
9. Champion HG, Seth SK. A revised survey of the forest types of India. Government of India, New Delhi 1968.
10. Shah NC, Joshi MC. An ethnobotanical study of the Kumaon region of India. Econ Bot 1971; 25:414-425.
11. Jain SK. Glimpses of Indian Ethnobotany. Oxford IBH Publishing Company, New Delhi 1981:1-334.
12. Shah NC. Main centers and workers of ethnobotany. In: A manual of ethnobotany. Jain SK Scientific Publishers, Jodhpur 1987:69-78.
13. Jain SK, Rao RR. A handbook of field and herbarium methods. Today and Tomorrow's Printers and Publishers, New Delhi 1977:1-157.
14. Gamble JS, Fischer CEC. Flora of the Presidency of Madras. London (Rep. Ed. 1957. BSI, Calcuta) 1915-1935.
15. Pullaiah T et. al. Flora of Andhra Pradesh (vol. 1-5). Scientific Publishers, Jhodpur 2018.