

Original Article

Popular and Famous Vegetation in Traditional Medicine of Lorestan Province

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Abstract

Background and Aim: About 2000 plant species grow in Lorestan province. Ethnobotany and folk healers have played major roles in the health of human beings since ancient times. The aim of this study was to identify and introduce the most widely used and common medicinal plants in traditional medicine of Lorestan province.

Materials and Methods: In order to gather information about its medicinal properties and to learn about people's beliefs about the famous species of the region, several local people, including nomadic, rural residents of urban areas and healers of the province were interviewed. The local medicinal information was collected using semi-structured methods, interviews, and personal observations. The frequency of citation (FC) and relative citation frequency (RFC) indices were used to determine the significance of medicinal species. Plant specimens were collected from habitats of Lorestan province and then were identified and deposited in the herbarium.

Results: Among the samples collected from different habitats of the province, 38 most widely used medicinal species belong to 20 plant families with the most extensive traditional use that were identified as the most famous medicinal plants in the region. According to the results of the present study, nomadic people (*Kouch rou* in Persian) had the most use of medicinal plants compared to other groups participating in the interviews.

Conclusion: The high values of FC and RFC indices for each species indicate the indigenous medicinal knowledge about the medicinal properties and treatment of diseases with that certain species. Medicinal plants in Lorestan are mainly used to treat gastrointestinal disorders, kidney diseases and nerve sedatives. Recording and publishing the local names of medicinal plants in the encyclopedia of the country will play pivotal roles in recognizing these potentials and exploiting them.

Keywords: Medicinal plant, Nomadic people, Relative frequency of citation, Lorestan

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Introduction

Traditional medicine is a set of indigenous knowledge, skills and native experiences used in different cultures to maintain health, and prevent, diagnose and treat corporeal and mental illnesses.

Herbal medicines include plants, plant materials, herbal products and end products that contain parts of plant, or other plant materials, or a mixture of them as active ingredients (1). The knowledge of using medicinal plants, which has a background in human history and culture, has been obtained through trial

and error and has been inherited from descendants to descendants (2). The first medicinal plant used in the Middle East dates back to the Paleolithic era, and the evidence for the use of herbal medicines by human dates back to 60,000 years ago (3). One of the important reasons for investigating the medicinal properties of plants is to learn about the beliefs of people in different countries with regard to the use of medicinal plants (4). Asia is one of the most important origins of herbal medicine and the first herbal guide dates back to five thousand years ago, during the Sumerians, when plants such as caraway and thyme were used for health (3). The culture and experiences of using medicinal plants in traditional Iranian medicine with its diverse vegetation in different regions of Iran is very rich and valuable. The use of plants as medicine shows the greatest human use of nature. There are no reliable statistics on the total number of medicinal plants in the world, and the number and percentage are very different for different countries and regions. Obviously, there are still many hidden secrets in the plant world (5). Research on natural plant products is often based on ethnobotanical information, and many of today's medicines are derived from medicinal plants in native communities, and more importantly, the study of these resources to help improve health care in marginalized areas has become a major component of ethnopharmacological research (6). The significance of ethnobotanical research is such that the use of traditional experiments increases the probability of discovering effective drugs by up to 40%, while this rate is only 1% in randomized studies (7). In the last few decades, increased level of knowledge and living standards of people and recognizing the factors affecting sustainable health have led to an increase in the general tendency to use medicinal plants. The value of medicinal plants to human livelihood is unlimited and they contribute basic to human health (5).

Lorestan province with an area of 28294 km² in western Iran contains a significant part of the Zagros Mountains and occupies 1.78 percent of the total area of the country (8). Lorestan with a minimum altitude of 330 m above sea level in Pol-e Zal area and a maximum altitude of 4050 m in Oshtrankooh, neighbors Hamedan and Markazi provinces to the

north, Khuzestan to the south, Kermanshah and Ilam provinces to the west and Isfahan to the east. Isfahan has a great climatic diversity which is quite evident from the northwest to the southeast (9). Vegetation in Lorestan is very diverse due to climatic and geographical conditions (10). This diversity has led to the diversity of the culture of consumption of medicinal plants. Medicinal and aromatic plants are an important parts of the natural heritage of the people of Lorestan who have long used them in addition to food in the treatment of various diseases and pains. The use of these plants, in addition to providing health, promotes livelihood and the local economy, particularly in rural communities. Considering the rich culture of herbal medicine in Lorestan province and the high volume of global trade in popular and economically valuable medicinal plants, it seems necessary to compile scientific documents on medicinal plants with the aim of regeneration and developing the knowledge of medicinal plants.

Materials and Methods

Medicinal species of Lorestan province were collected during the years 2005 to 2016. These species were collected from different habitats, along with recording habitat characteristics (altitude and geographical location). Plant specimens were dried and pressed using standard methods. Identification of the specimens based on valid flora sources, including flora Iranica (11), flora of Turkey (12) and flora of Iran (13) was performed. Herbarium documents were kept in the herbarium of Lorestan Agricultural and Natural Resources Research and Education Center. Purposeful interviews were conducted with the aim of achieving indigenous knowledge and therapeutic properties of the identified drug samples from indigenous and knowledgeable individuals in the field of traditional medicine and perfumes. The study was a survey and the interviews were conducted in a semi-structured method. The interviews took place in a quarterly period, from April to June 2016. Native people and healers (Attars) were selected by random sampling. The total number of native people (160 individual) and healers (20 individual) participating in this study was 180 people. The questionnaires had two parts. The first part included the interviewee's personal characteristics such as age, gender and level of

education of the individuals and the second part was concerned with familiarity with plants, name of medicinal species, habitats, and medicinal properties. The most famous species were identified using the results of interviews and gathering information about the traditional uses of medicinal species. In order to achieve this goal, the snowball sampling method was used, in which the first group of interviewees who were elderly natives and healers were requested to introduce experienced people they knew to advance the research.

Quantitative indices frequency of citation (FC) and relative frequency of citation (RFC) from aspects of quantitative ethnobotanical analysis were calculated to evaluate the medicinal use of plants in an area. RFC was calculated using the following formula (14):

$$RFC = FC/N \quad (0 < RFC < 1)$$

The value of the RFC index for medicinal plant species is based on the citation percentage for each species. In the formula, (FCs) stands for the number of informants who refer to the use of a certain species and is also known as the frequency of citations (Quotation) and (N) indicates the total number of informants participating in this survey study. This index is theoretically a variable between zero and one: zero when nobody refers to a plant as a beneficial, and one when all the informants consider a certain species useful; that is unlikely.

Results and Discussion

Based on the results of the interviews, the statistical

characteristics of the interviewees, including gender, number of interviewees in each age group, level of literacy and source of knowledge about the properties of medicinal plants have been presented in Table (1). According to the results of the interviews, from the total number of medicinal species collected from different habitats of Lorestan, 38 medicinal species belonging to 20 families had the highest level of use among the residents of the region. They became known as the most famous and widely used medicinal species in the region. Plant families Lamiaceae (8 species), Asteraceae (6 species) and Apiaceae (4 species) had the most popular medicinal species in the province with 22.2%, 13.9% and 11.1%, respectively. The scientific name, family, common name, the part used, mode of application/preparation, uses, FC and RFC index with the most famous medicinal species in the region have been presented in Table (2). Leaves (30%) were the most widely used part of the plant in traditional medicine in the study area. The results related to families with high use of medicinal species, percentage of use of different plant organs, variable of knowledge acquisition, level of literacy and education and lifestyle variable have been presented in Figures 1-5.

The first step in ensuring the quality, safety and effectiveness of herbal medicines is to identify the plant species (1). According to the results in Table 2, 38 well-known and widely used drug species in Lorestan province were identified as having the highest frequency of citations (FC) and relative frequency of citations (RFC), which are well known

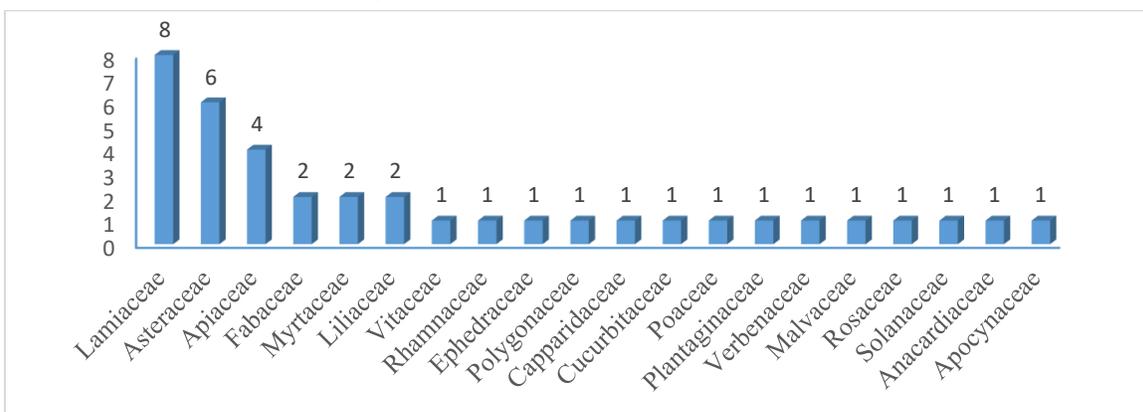


Figure 1. Plant Families with Widely Used and Famous Medicinal Species in Traditional Medicine of Lorestan.

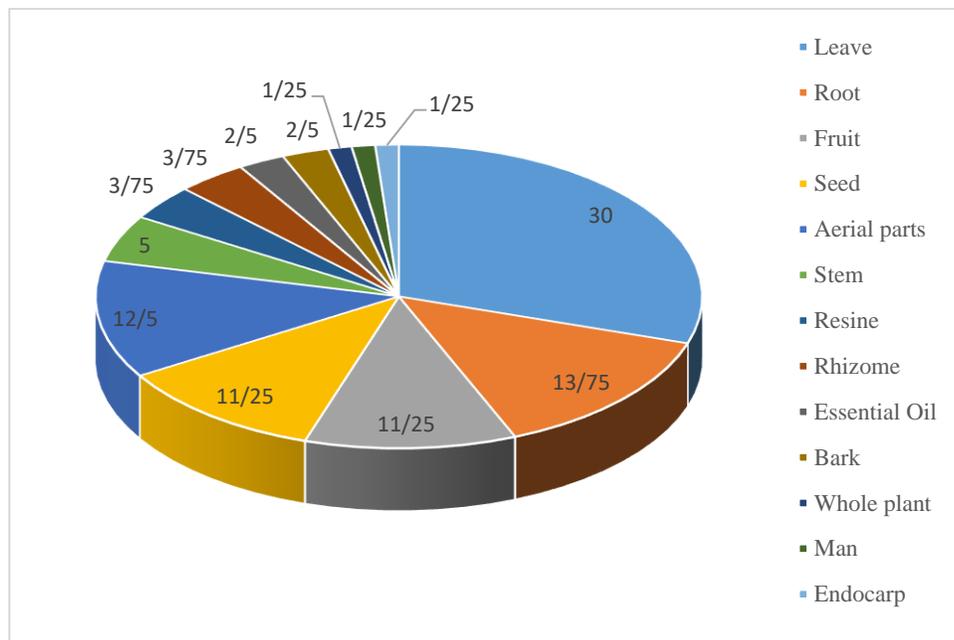


Figure 2. Results of the Percentage of Plant Parts Used in Traditional Medicine of Lorestan.

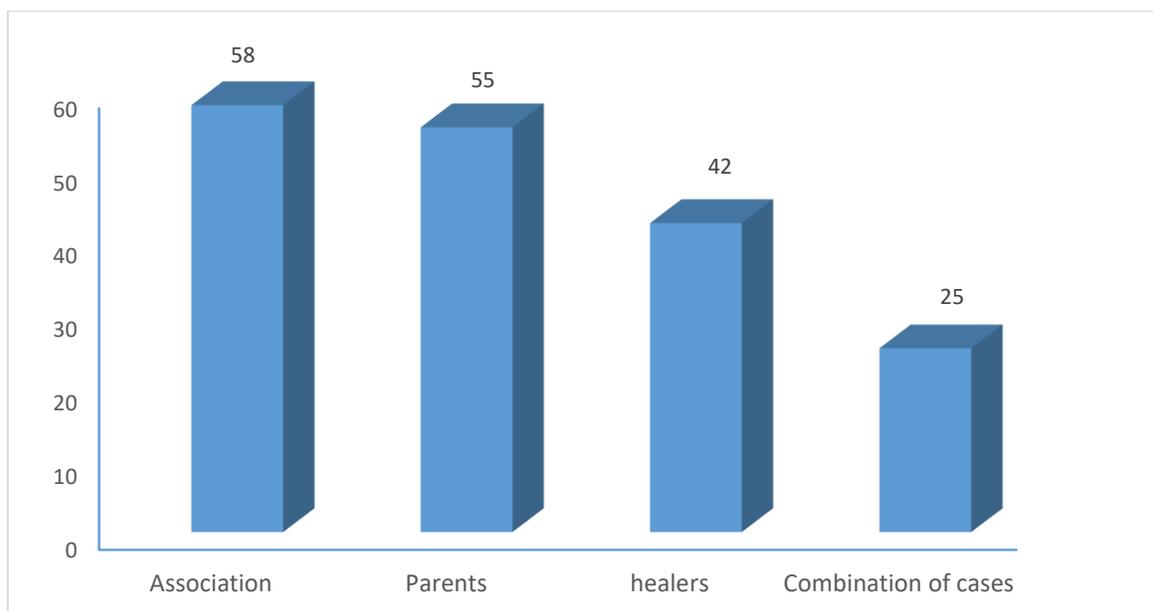


Figure 3. Results of the Traditional Knowledge Sources of the Interviewees.

and widely used in the province. Data analysis using both FC and RFC quantitative methods confirmed that the relative importance of the species and the sharing of herbal medicine knowledge between individuals and different ethnic groups in the study area are rich. Based on the results, most users of medicinal plants among the interviewees were nomadic people (43.3%) (*Kouch rou* in Persian)

whose treatment option was to use medicinal plants according to traditional beliefs and individual experiences. Due to the settlement method of these people and the dependence of their livelihood on pastures and livestock, their access to urban facilities and development is minimum level. The coexistence of nomadic life with nature, availability, cheapness and low side effects of medicinal plants and limited

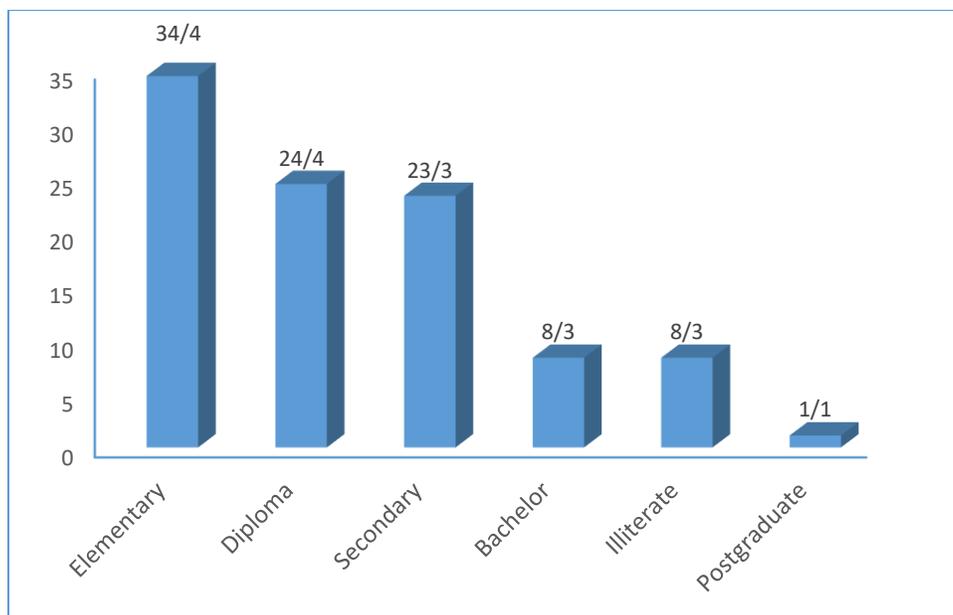


Figure 4. Results Related to the Literacy and Education of the Interviewees.

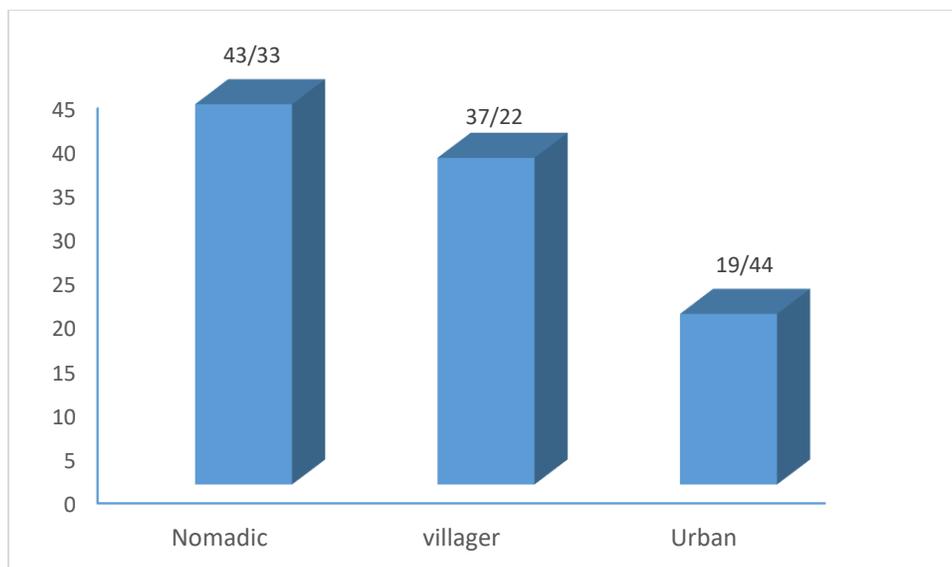


Figure 5. Results of the Percentage Variables of the Interviewees' Settlement Method.

access to health and educational facilities are some of the reasons for using medicinal plants to treat diseases of this group of people in the province (Figure 6).

In terms of literacy level and education of the interviewees, the highest percentage (34.4) belonged to natives with primary education. It should be noted that these people were rich in terms of recognizing the medicinal species of the region, medicinal

properties and sharing the beliefs and culture of herbal medicine. The age group of 45-55 years had the highest percentage (28.9) of the native people participating in the interview, who were mostly either illiterate or with elementary education. The experiences and history of using plants in traditional medicine are passed from generations to generations within the family and communities, and by healers or a combination of them. The age of a small percentage



Figure 6. Nomadic People as the Main Users of Medicinal Plants.



Figure 7. Edible Mushrooms and Other Specimens for Sale in Local Markets.

(4.4%) of the participants in the interview was over 75 years old, and it can be said that each of them is a heritage and a spokesman treasure whose loss is similar to the loss of part of this heritage that will be valuable. Recording and writing the beliefs and experiences of these people will greatly contribute to preserving and reviving the province's native knowledge and traditional medicine. Since the native

people of Lorestan have been using the plants of the region for a long time in traditional treatment and relief of their pains, the values of FC index (Frequency of Citations), related to popular and common species are high. In addition to traditional therapeutic uses (as a decoction, infusion, ointment and cense), these species are often eaten fresh, including *rivas* (*Rheum ribes* L.), *marzeh* (*Satureja khuzestanica* jamzad),



Figure 8. Vertical Walls of Zal River, a Habitat of Bangdaneh Species.

avendoul (with local name Penoma) (*Smyrniium cordifolium* Boiss.), *kangar* (*Gundelia tournefortii* L.), *angoor* (*Vitis vinifera* L.), and *na'na felfeli* (*Mentha Piperita* L.). The use of species with which people in nomadic and rural areas are fully acquainted and have access is an integral part of the diet and in cases of illness is part of the treatment process. The use of medicinal plants among the urban population of the region was mainly related to the pharmaceutical application of medicinal plants and oral use was of secondary importance. Another case that has a long and famous history in the Lorestan herbal culture is the use of edible mushrooms (Mushrooms) which are called "*Gharch e Geli*" in Lori dialect. These mushrooms emerge from the soil in spring and after spring rains along with lightning and have nutritional and medicinal values. They have a special and delicious taste that is used in food preparation. It should be noted that in the specific habitat of these fungi, which is commonly called *Bouso* or *Boustan*, toxic mushrooms also grow. Distinguishing toxic mushrooms from edible and non-toxic mushrooms is not an easy task and is limited to people in the area, mostly the elderly who have experience and skills in identifying edible mushrooms (Figure 7).

Medicinal herbs in traditional medicine of Lorestan are mainly used to treat gastrointestinal as well as

respiratory disorders, and kidney diseases. Moreover, they are used as nerve sedatives. Medicinal species used to treat gastrointestinal disorders include *avishan* (*Thymus kotschyanus* Boiss. & Hohen), *Joshan* (*Artemisia persica* Boiss.), *na'na felfeli* (*Mentha Piperita* L.), *Fialeh* (*Echinophora cinerea* (Boiss.) (Hoblge & Lamond), *kaleh* (*Tetrataenium lasiopetalum* Manden (Boiss.)), *pouneh* (*Mentha longifolia* (L.) Hudson.) and *shirin bayan* (*Glycyrrhiza glabra* L.). For the treatment of respiratory disorders and colds, mainly the species of marshmallow or *gol e hirou* (*Althaea officinalis* L.), *mourt* (*Myrtus communis* L.), *balhang* (*Plantago major* L.) and eucalyptus (*Eucalyptus globulus* Labill) are used. *Bon sorkh* (*Allium jesdianum*), *avendoul* (*Smyrniium Cordifolium* Boiss.), and *khar maryam* (*Silybum marianum* (L.) Gaertn) were the most commonly used species for the treatment of renal disorders in the region. Regarding silymarin (effective substance of *khar maryam*), there is clinical evidence for hepatic and antimicrobial protective effects, including inhibiting the growth of cancer cells in prostate, skin, and breast cells (15). Medicinal species of *avishan* or *azboua* (*Thymus kotschyanus* Boiss. & Hohen), *kolkeneh* (*Stachys lavandulifolia* Vahl.), *fialeh*, *pouneh*, *mokhaleseh* (*Tanacetum kotschyi* (Boiss.) Grierson) and *semsa* (*Dracocephalum kotschyii* Boiss.) are used as nervous calmatives among the

Table 1: Statistical Characteristics of the Interviewees.

Variables	Items	n	%
Gender	male	105	58.3
	Female	75	41.4
Age	25-35	14	7.8
	35-45	43	23.9
	45-55	52	28.9
	55-65	45	25
	65-75	18	10
	Older than 75	8	4.4
Education	Illiterate	15	8.3
	Elementary	62	34.4
	Secondary	42	23.3
	Diploma	44	24.4
	Bachelor, Licentiate	15	8.3
	Master	2	1.1
	Origin of traditional knowledge	Parents	55
	healers	42	23.3
	Association, Community	58	32.2
	Combination of cases above	25	13.9
Settlement method	Nomadic	78	43.33
	Rural	67	37.22
	Urban	35	19.44

inhabitants of the area. The results of new research on these species have confirmed many traditional uses and indigenous beliefs, and the medicinal properties of these species have been proven in modern medical research using the extraction of their effective substances (16-18). By studying the results of research and phytochemical experiments performed on medicinal species, the anti-cancer effect of *fialeh* (19), *bonsorkh* (20), *joshan* (21), *mousir* (22) and *nastaran e koochi* (23) species has been proven in modern medicine. Given the growing trend of diseases in today's world, the confirmation of pharmaceutical culture and experimental knowledge by updating this information will create a growing trend in the field of native medicinal plants and can be focused and invested in targeted phytochemical research on these species' therapeutic and economic benefits.

Among the most famous medicinal plants in

Lorestan, there are several endemic species, including *mofarra* (*Nepeta cryspa* Wild.), *fialeh* (*Echinophara cinerea* Boiss.), *bang daneh* (*Hyoscyamos tenuicaulis* Schoneck-Temesy), *bon sor* (*Allium jesdianum* Boiss.) and *mousir* (*Allium stipitatum* Regel.) which are of high significance from two aspects. The first aspect is their endemic and the uniqueness as well as unrivaled nature of these reserves, which will increase the demand for the export of these endemic species. *Bang daneh* (*Hyoscyamos tenuicaulis* Schoneck-Temesy) is endemic to Iran and has not been reported from any other country. It is found in one of the major distribution centers in the south of Lorestan province (Figure 8). In addition to being mountainous, this region is located along Seymareh, Kashkan and Zal rivers. These factors have increased the ecological complexity in the south of Lorestan, which is important for species and is one of the important centers of genetic resources and plant diversity in the

country. Vertical walls of rivers, crevices of rocks and rocks in the south of Lorestan, due to the special topographic conditions and the impossibility of public access, are special habitats that have special plant species and are a pool of many ancient plants that are somewhat immune to changes from human

intervention, competition, and genetic modification. They have been able to survive at high relative humidity. Any change in the limited habitat of these rare species could seriously endanger their survival.

Table 2: Characteristics of Famous Medicinal Species of Lorestan.

Scientific name	Family	Common name	Parts used	Mode of application/Preparation	Uses	FC	RFC
<i>Thymus kotschyanus</i> Boiss. & Hohen	Lamiaceae	Avishan	Aerial parts	Flavouring, Infusion	Spice, Incense for Colds Antibacterial, Antifungal, Antioxidant, Expectorant, Hypnotic	149	0.83
<i>Allium jesdianum</i> Boiss.	Liliaceae	Bon Sor	Leave, Bulb	Edible, Infusion	Repulse of Kidney stones, Digestive system pains, Rheumatism and moisture diseases	146	0.81
<i>Tanacetum kotschyi</i> (Boiss.) Grierson	Asteraceae	Mokhaleseh	Leave, Flower	Edible	Treat of Kidney problems, Anti-diarrhea, Remedy of Colic, Carminative, Antiparasitic, Insecticide	144	0.8
<i>Satureja khuzistanica</i> jamzad.	Lamiaceae	Marzeh, Jatarah	Aerial parts	Edible, Flavouring	Spice, Carminative, Appetizer, Analgesic, Toothache, Stomach tonic, Expectorant, Diuretic, Kidney and urinary tract stones, Antispasmodic, Astringent	144	0.8
<i>Nepeta cryspa</i> Wild.	Lamiaceae	Mofarra	Aerial parts	Flavouring, Infusion	Stomach tonic, Diaphoretic, Carminative, Pertussis, Calmative, Laxative, Colds, treatment of Hiccups	142	0.79
<i>Artemisia persica</i> Boiss.	Asteraceae	Joshan	Aerial parts	Flavouring, Decoction	Spice, Anti infections, Tonic, Cough, Febrifuge, Headache, Carminative, Anti malaria, Anti intestinal worms	142	0.79
<i>Dracocephalum kotschyii</i> Boiss.	Lamiaceae	Semsa	Leave	Flavouring, Infusion	Food, Spice, Febrifuge, Sedative, Antispasmodic, Antihyperlipidemic, Anti-diarrhoeal	140	0.78
<i>Allium stipitatum</i> Regel.	Liliaceae	Mousir	Rhizome, Leave	Edible	Food, Spice, Appetizer, Duretic, Diaphoretic, Expectorant, Laxative, Sedative Joint pain, Hypertension	140	0.78
<i>Mentha Piperita</i> L.	Lamiaceae	Na'na felfeli	Leave, Aerial parts, Essential Oil	Edible Infusion	Food, Stomach tonic, Carminative, Duretic, Diaphoretic, Increase bile, , Anti diarrhea, Nasal bleeding, Nervous headaches, Migraine, Sedative Chest pain, Treatment of Hiccup, Anti-infections	140	0.78
<i>Stachys lavandulifolia</i> Vahl.	Lamiaceae	Kolkenah	Flower	Infusion	Digestive system tonic, Antimicrobial, Antioxidant, Decrease sweating, Exhilarating, Phytoestrogen, Decrease menopausal symptoms such as sweating, hot flashes	139	0.77

					and headaches		
<i>Vitis vinifera</i> L.	Vitaceae	Angoor	Fruit, Leave, Seed, Seed Oil	Edible	Food, Tonic, Astringent, Antioxidant	139	0.77
<i>Ziziphus spina-christi</i> (L.) Willd.	Rhamnaceae	Sedr, Rimlec	Leave, Flower, Fruit	Edibel, Cataplasma	Hair tonic, Astringent, Digestive system tonic, Hypertension, Cough	139	0.77
<i>Echinophara cinerea</i> Boiss.	Apiaceae	Fialeh	Aerial parts	Edible	Spice, Anti-diarrhea, Duretic, Skin fungal disease, Antispasmodic, Anti-bacterial, Improve digestive function	137	0.76
<i>Thymbra spicata</i> L.	Lamiaceae	Jataneh	Aerial parts		Aromatic, Flavoring food, Treat of Asthma, Bronchitis Strong anti-microbial	137	0.76
<i>Cichorium intybus</i> L.	Asteraceae	Kasni	Root, Aerial parts	Decoction	Blood cleanser, Treatment of Fruncles, Treat of Icterus, Antipyretic Treatment of Dermal Allergy	137	0.76
<i>Tetrataenium lasiopetalum</i> (Boiss.) Manden = <i>Heracleum lasiopetalum</i> Boiss.	Apiaceae	Kaleh	Leave Root, Stem, Bu ds		Aromatic, Appetizer, Carminative, Stomach reflux, Nausea, Digestive problems, Respiratory and lung problems (the roots), Anti- infections and strong anti- microbial, Bronchial infections, Intestinal worms, Improve memory	135	0.75
<i>Mentha longifolia</i> (L.) Hudson.	Lamiaceae	Pouneh	Aerial parts, Leave	Edible Infusion	Food, Sedative, Carminative, Stomach tonic, treatment Children fevers by sleep children in the leaves of the plant	135	0.75
<i>Ephedra procera</i> Fisch. et Mey.	Ephedraceae	Rish Boz	Stem	Decoction	Increases sweating, Dilates the bronchioles, Diuretic, Stimulant, Raises blood pressure, Treat of asthma, Treatment to alleviate the aches and pains of Rheumatism, Increase blood pressure, Open pupil, Treat of Asthma, Stimulus of uterine contractions, Smoke movements of the stomach and intestine	135	0.75
<i>Rheum ribes</i> L.	Polygonaceae	Rivas	Root, Rhizom e, Petiolul e	Edile	Food, Antibacterial, Anti-obesity Exhilarating, Anti-depressant	133	0.74
<i>Silybum marianum</i> (L.) Gaertn	Asteraceae	Khar Maryam	Seed, Fruit, Root	Infusion	Hypertension, Hepatoprotective, Lactating, Antioxidant, Hyperlipidemia, Detoxifying agent	133	0.74
<i>Quercus infectoria</i> Oliv.	Fagaceae	Darmazou (Gazoolah)	Fruit, Bark	Edible	Astringent, Expectorant, Anti-diarrhea, Tonic, Digestive,	131	0.73

		bali)	Fruit, Endocar p, Resin, Leave, Man		Tuberculosis, Stop bleeding, Antibacterial and Anti-virus, Anemia, Diabetes		
<i>Heracleum persicum</i> desf. ex fischer	Apiaceae	Golpar	Leave, Seed, Root	Flavouring, Edible	Aromatic, Anti-microbial, Carminative and anti-flatulence, Duretic, Intestinal worms, Memory improving, External use for rash and pustule	131	0.73
<i>Capparis Spinosa</i> L.	Capparidace ae	Kabar, Alaf e mar	Root, Bark, Leave	Edible, Cataplasm	Unopened buds for pickling, Laxative, Bark is bitter and Diurtic, Appetizer, Purifying blood and stops internal bleeding, Preparation of cosmetics	131	0.73
<i>Bryonia multiflora</i> Boiss. & Heldr.	Cucurbitace ae	Fashera	Whole plant, Resin	Edible, Cataplasm	Strong laxative, Duretic, Increase bile, Diabetes, Sedative Rheumatism pain, Liver and spleen problems	131	0.73
<i>Avena sativa</i> L.	Poaceae	Jo Dosar	Seed	Edible	Food, Nourishing, general tonic, Depression, emollient, Helps quit smoking and drug addiction	131	0.73
<i>Smyrniun cordifolium</i> Boiss.	Apiaceae	Avendoul	Stem, Root	Edible	Food, Febrifuge, Relieve Kidney and bladder pain, Anti tooth decay	130	0.72
<i>Plantago major</i> L.	Plantaginac eae	Balhang	Leave, Seed	Infusion	Laxative, Antipyretic, Treatment of Icterus, Antitussive, Anti- diarrhea, Gastric ulcer, Toothache, Blood-cleaning	130	0.72
<i>Vitex pseudo- negundo</i> (hausskn).	Verbenacea e	Panjangosht, Kerf	Fruit, Leave	Infusion, Cataplasm	Bruise, Appetizer, Carminative, Duretic, Hormonal imbalances, Narcotic, Insecticide	130	0.72
<i>Althaea officinalis</i> L.	Malvaceae	Khatmi	Flower, Leave, Fruit, Root	Infusion, Cataplasm	Hair tonic, Cough, Peptic ulcer, Kidney and bladder stones, Laxative, Purgative	130	0.71
<i>Rosa canina</i> L.	Rosaceae	Nastaran e Koohi	Flower, Fruit, Hips (Recept acle)	Edible, Infusion	Extremely high levels of vitamins, Anti diarrhoea, Antidiuretic, Reduce thirst and alleviate gastric inflammation, Hip syrup a Nutritive drink for young children, Antihypertensive	128	0.71
<i>Hyoscyamus tenuicaulis</i> Schoneck- Temesy	Solanaceae	Bangdaneh	Leave, Seed		Sedative, Calmative, Antispasmodic, External use of seed oil to relieve Rheumatic and gout pains	128	0.71
<i>Achillea wilhelmsii</i> C.Koch.	Asteraceae	Boomadaran	Aerial parts, Leave, Root	Infusion	Anti-diarrhea, Antiacetic, Hypoglycemia, Febrifuge, Appetizer, Anthelmintic, Dyspepsia, Nerve tonic, Osteoarthritis, Antihemorrhoids	126	0.71
<i>Pistacia khinjuk</i> Stocks	Anacardiace ae	Gholeng narma, Khinjok	Fruit, Resin, Leave, Root	Chewing gum, Edible	Flavouring, Food: as nuts for snack; its oil is used in cooking; in combination with vinegar is used as appetizer, Antitussive,	126	0.7

					Astringent, Stomachache, Skin Lightening, Disinfect the room air during colds and other infectious diseases		
<i>Glycyrrhiza glabra</i> L.	Fabaceae	Shirin Bayan, Malim	Leave, Root	Edible, Decoction	Sedative, Expectorant, Digestive system tonic, Anti-inflammatory, Anti-virus	126	0.7
<i>Gundelia tournefortii</i> L.	Asteraceae	Kangar	Rhizome, Seed, Leave	Edible	Food, Hyperlipidemia, Kidney stone, Digestive, Anthelmintic, Febrifuge, Anti Parasite, Treatment of infections caused by burns	126	0.7
<i>Myrtus communis</i> L.	Myrtaceae	murd	Leave, Seed	Cataplasm	Colds, Stomach tonic, Astringent, Sedative, Dandruff, Hair tonic, Aphthous ulcer, Herpes and Oral thrush	126	0.7
<i>Nerium oleander</i> L.	Apocynaceae	Kharzahrah, Zala	Leave, Stem	Infusion, Cataplasm	Treatment of Constipation, Wound healing, Respiratory problems, Treat of Asthma, Blister Reduce bile, Insecticide	126	0.7
<i>Eucalyptus globulus</i> Labill.	Myrtaceae	Ocalyptus	Essential Oil, Leave	Vapour	Colds, Antitussive, Anti-infection, Expectorant, Bronchitis, Improve skin problems	126	0.7

The second aspect of the importance of endemic species is acquaintance of the inhabitants of the region with these species and their properties that cause the indiscriminate harvesting of medicinal plants for economic purposes that disrupts the genetic balance of populations and genotypes and causes their extinction. Exploitation of these pristine and unique genetic resources should not continue without considering the survival conditions and providing a suitable environment for cultivation and domestication of these species. Addressing the history of traditional Iranian medicine and studying the properties of medicinal plants, particularly endemic species that are used in traditional Iranian medicine, can play a very important role in recognizing the values, capabilities and advantages of traditional Iranian medicine, which requires a cultural attention and acquaintance of the scientific community of Iran with historical sources (2). Popular medicinal plants of Lorestan are economically important for people and have a positive effect on their livelihood. Furthermore, they are effective in reducing the initial costs of treating

diseases and helping with health care. Scientific and practical planning for the cultivation and domestication of these species that are also compatible with the climatic and ecological conditions of the region enables the people to utilize the economic benefits of these reserves, such as creating productive employment, contributing to gross domestic products and protecting them. Lack of guaranteed purchase and raw sales of cultivated medicinal plants are also among the problems that will be solved by the principled planning of the responsible institutions. Introducing native and popular species of the province to academic researchers of pharmaceutical and plant sciences for accurate phytochemical experiments and using the results obtained in related organizations to introduce species and their properties are among the benefits of studies related to medicinal plants.

Conclusion

According to the results of this study, parents and traditional communities compared with governmental education systems have played a more important role in acquiring and developing the culture and knowledge

of the use of medicinal plants. Education, in addition to educating people about native species and their medicinal properties, will be an effective step towards proper exploitation, prevention of genetic erosion, and planting and trading of these species. It is worth noting that in parallel with the identification and introduction of these species, another step should be taken to document and revive the beliefs of the province's medicinal culture and the experiences of the elderly, with the aim of principled, continuous and stable use. Recording the local name (vernacular names) of Lorestan medicinal plant species in the encyclopedia of medical sciences of the country will definitely play a significant role in recognizing the potentials and correct as well as purposeful use of these resources and facilities.

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Conflict of Interest

The authors declare that they have no conflict of interest.

References

- World Health Organization (WHO). General guidelines for methodologies on research and evaluation of traditional medicine. World Health Organization. 2000.
- Rezaei A. A Survey on the Situation of Traditional Iranian Medicine and its History in Iranian Herbal Research. *Medical History Journal*. 2018; 9 (32): 71-84. [In Persian]
- Ziaee S.A. History of Herbal Medicine. *Journal of Medicinal Plants*. 2002; 2 (2): 43-52. [In Persian].
- Mirmiran S. D., Arasteh. A Study of the History of Medicinal Plants in China to the Important Birthplace of Herbal Medicine and the Amazing Properties of Thyme in Iran. 2019; 4 (2). [In Persian].
- Hamilton A.C. Medicinal plants, conservation and livelihoods. *Biodiversity & Conservation*, 2004; 13(8): 1477-1517.
- Heinrich M. Ethnobotany and natural products: the search for new molecules, new treatments of old diseases or a better understanding of indigenous cultures? *Current Topics in Medicinal Chemistry*. 2003; 3(2):141-154.
- Delfan B, Kazemeini H, Bahmani M, Identifying Effective Medicinal Plants for Cold in Lorestan Province, West of Iran. *Journal of Evidence-Based Complementary & Alternative Medicine* 2015; 20(3) 173-179.
- Amiri Yarahmadi, b., Sepahvand, N. Ghavami, M. The role of climate and climate diversity in the process of tourism development in Lorestan province, 2014.
- Delfan B, Bahmani M, Hassanzadazar H, Saki K, Rafieian-Kopaei M, Rashidipour M, et al. Ethnobotany study of effective medicinal plants on gastric problems in Lorestan province, West of Iran. *Journal of Chemical and Pharmaceutical Research*, 2015; 7(2): 483-492.
- Torkashvand M. Petansielhayeh Mohit e Tabiei Lorestan (Potentials of Lorestan's Natural Environment (Vegetation)). *Sepehr Geographical Information Scientific-Research Magazine*. 1995; 4 (15): 24-31. [In Persian].
- Rechinger K. H. (Ed.) *Flora Iranica*. Akademische Druck- u. Verlagsanstalt, Graz. 1963-2012; vols. 1-178.
- Davis, P. H. (Ed.) *Flora of Turkey* Edinburgh University Press, Edinburgh. (1965-1988); vols. 1-10.
- Assadi M, Maassoumi A. A, Khatamsaz M. and Mozaffarian V. *Flora of Iran* (Flora of Iran). Research Institute of Forests and Rangelands, Tehran. 1988-2013; vols. 1-76. [In Persian].
- Tardio J, Pardo-de-Santayana M. Cultural importance indices: a comparative analysis based on the useful wild plants of Southern Cantabria (Northern Spain). *Economic Botany*. 2008; 62(1): 24-39.
- Post-White, J., Ladas, E. J., & Kelly, K. M. Advances in the use of milk thistle (*Silybum marianum*). *Integrative cancer therapies*, 2007; 6(2), 104-109.
- Rezaei MB, Jaimand K, Karimi S. Chemical composition of the essential oil of two *Tanacetum* species from Iran. 2015; 187-191.
- Herbs with all their Uses as Remedies for Common Ailments. Dorling Kindersley; 2000.
- Rabbani M, Sajjadi S. E, & Zarei H. R. Anxiolytic effects of *Stachys lavandulifolia* Vahl on the elevated plus-maze model of anxiety in mice. *Journal of ethnopharmacology*, 2003; 89(2-3): 271-276.
- pharmacological effect and chemical composition of *Echinophora* species growing in Iran. *Pharmacognosy research*. 2017; 9(4):305.
- Asemani Y, Zamani N, Bayat M and Amirghofran Z. Allium vegetables for possible future of cancer treatment. *Phytotherapy Research* 2019; 1-21.
- Taghizadeh Rabe S.Z, Mahmoudi M, Ahi A and Emami S. A. Antiproliferative effects of extracts from Iranian *Artemisia* species on cancer cell lines. *Pharmaceutical biology*, 2011; 49(9): 962-969.
- Asgarpanah J, Ghanizadeh B. Pharmacologic and medicinal properties of *Allium hirtifolium* Boiss. *African Journal of Pharmacy and Pharmacology*. 2012; 6(25):1809-1814.
- Najafpour Navaei M. *Anticancer medicinal plants in Iran*. 1 nd. Research Institute of forests and rangelands. Tehran. 2006. Pp: 261. [In Persian].