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Ethno-Botanical Study of Appetizing Medicinal Plants Used in Musian City, West of Iran

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ABSTRACT

Introduction: There are various drugs and methods to deal with anorexia, but both have adverse effects and limited effectiveness. Dissatisfaction of people with expensive chemical drugs that have many side effects as well as the desire to get fit through natural methods are important reasons for people to use herbal drugs. Considering that many plants used by people are used in the treatment of anorexia, this study aims to identify and report the plants that are used in the treatment of anorexia/hypophagia in the ethnobotanical knowledge of Musian city in order to facilitate access to them.

Methods: This ethnobotanical study was conducted from May 2022 to January 2023 through face-to-face interviews and using a questionnaire among 28 traditional healers in Musian (West Iran). These questionnaires included demographic and specialized information on the medicinal plants of the 28 people who participated in this study. The results obtained from the questionnaires were directly transferred to the relevant tables and recorded. Finally, the data were analyzed by Excel.

Results: The results of the study showed that in Musian 12 species of medicinal plants including *Amygdalus communis* L., *Centaurea solstitialis* L., *Ficus carica*, *Malva neglecta* Wallr, *Menta longifolia* (L.) Hudson, *Rhus coriaria* L, *Tymbra spicata*, *Medicago sativa*, *Linum usitatissimum*, *Achillea wilhelmsii* C. Kock, *Alhagi persarum*, *and Alyssum campestre* are in the ethnobotanical knowledge of this region as herbal medicine for anorexia (appetizer). Asteraceae, Laminaceae, and Fabaceae with two plant species are the most plant families that are used as appetizers in the region. The aerial organs were identified as 46% of the most used plant organs.

Conclusion: The presence of rich plant flora and medicinal plant species in Musian city shows that this region is rich in medicinal plants and this issue can provide a suitable ground for better use of medicinal plants of this city to produce appetizing herbal products.

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Intorduction

Anorexia is one of the problems that can occur at any age and with any condition. Sometimes parents complain about their children's anorexia, and sometimes adults become anorexic due to digestive or nervous problems. This issue can lead to anemia, weakness, digestion problems, severe weight loss or other diseases (Morley and Silver, 1988).

Anorexia is more commonly known as anorexia nervosa. In fact, this disease includes two cases of eating disorder and metabolic disease, which causes excessive weight loss and severe emaciation due to starvation (Serpell et al., 1999). In other words, anorexia nervosa is a type of eating disorder characterized by abnormally low weight, extreme fear of gaining weight, and a false perception of weight. People with anorexia nervosa make a lot of effort to control their weight, so that this effort disrupts their lives (Bruch et al., 1982). Studies have estimated that approximately 2% of American women and 0.3% of men will suffer from this disease during their lifetime (Roux et al., 2012).

Anorexia or appetite disorders are commonly seen in different age groups. Anorexia can be pathological or physiological. Anorexia nervosa, which has a high prevalence among young girls, is one of the types of anorexia (Keski-Rahkonen et al., 2007).

Severe weight loss, decreased libido and sexual power, sleep problems and chronic fatigue, feeling dizzy, stomach pain, constipation and abdominal bloating, body cooling or low body temperature, soft and thin hair growth all over the body, irritability and moodiness, problem in concentrating and low blood pressure, loss of appetite leads to anorexia (Keski-Rahkonen et al., 2007).

Just as many people suffer from weight gain and obesity and look for medicinal herbs and herbal teas for weight loss, but there are also people who suffer from underweight and thinness and seek herbal and natural herbal teas for weight gain. Ethnobotany studies and examines how people of a particular tribe, culture or region use native plants in that region. Considering that the methods and uses of medicinal plants are different in different regions (Shahsavari, 2021).

Ethnobotany is a method of scientific monitoring of the information available in the public mind. The topic of this science is related to the use of plants in the life of the people of a nation (Baharvand Ahmadi et al., 2016; Saki et al., 2023; Mangena et al., 2021; Graily afra et al., 2020). A very important part of the sources of information in an ethnobotanical study is related to the data obtained from the natural life of the people of a nation (about their attitude towards plants), which usually has a narrative structure in the mind and language of those people (Azarpendar et al., 2022).

Usually, medicinal plants that are used as appetizers for weight gain are high in fiber and protein (Zargari, 1997). In traditional Iranian medicine, medicinal plants such as thyme, wormwood, bay leaf, okra, barberry, olive, lettuce, banana, valerian, rhubarb, dill, fenugreek and many other medicinal plants are used as appetizers (Zargari, 1994; Hosseinnia et al. 2020; Ebrahimi et al. 2022; Saif et al. 2021). Ethnobotany is the study of traditional and local use of plants of different regions by local people and different cultures. Its purpose is to describe the relationships between cultures and plants, focusing on how they are used. Local people and elders of each region often have a lot of knowledge about the traditional uses of plants. Therefore, in this study, we tried to make an ethnobotanical evaluation in the city of Musian, located in the city of Dehlran in the province of Ilam.

Materials and Methods

In this ethnobotanical study, indigenous knowledge about medicinal plants used as an appetizer in Musian city from May 2022 to January 2023 was conducted through face-to-face interview and using a questionnaire among 28 traditional healers in Musian (western Iran).

These questionnaires included demographic and specialized information on medicinal plants. The questioners personally referred to the studied subjects and recorded the herbal beliefs of anorectic/anoretic plants in relation to receiving information. Out of 28 people studied, 4 were women and 24 were men. The education level of the people was from diploma to master's degree. The results obtained from the questionnaires were directly transferred to the relevant tables and recorded. Finally, the data were analyzed by Excel. In this study, the number of times the plant was used was calculated through the following formula.

The number of times of use = the number of people who mentioned the effect of the plant ÷ the total number of people who filled out the questionnaires × 100

Results

After analyzing the ethnobotanical information of the region about appetizing plants and entering the data into Excel, the results of the study showed that there are 12 types of medicinal plants in Musian, including mountain almond, corn flower, fig, mallow, pennyroyal plant, sumac, thyme, alfalfa, flax, yarrow, Alhagi, and alyssum which are used in the ethnobotanical knowledge of this region as herbal medicine for anorexia (appetizer). Additional information about appetizing medicinal plants is given in Table 1. The results of the statistical analysis of the number of plant families are shown in figure 1. Asteraceae, Laminaceae, and Fabaceae with 2 plant species are the most plant families that are used as appetizers in the region. Also, the percentage of plant organs used in this study is shown in figure 2. Aerial organs are the most used plant organs in the region with 46%. Additional information about the plant organs used is given in figure 2.

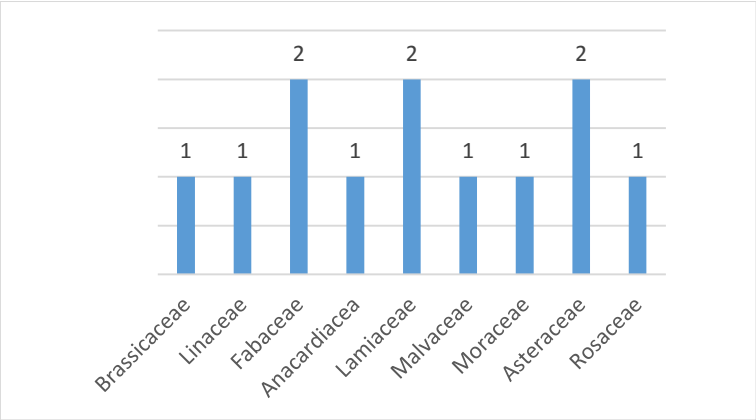

Figure 1. Number of plant families used as appetizers in the treatment of anorexia

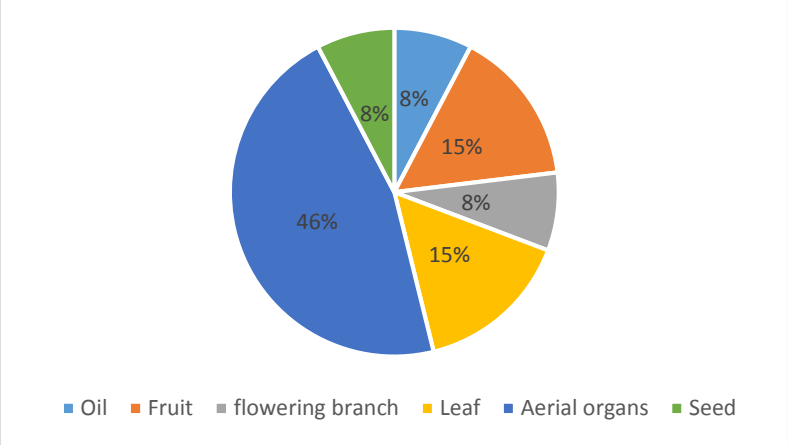

Figure 2. The percentage of traditional used forms of medicinal plants in Arasbaran forests as laxative

Table 1. The medicinal plant used in the ethnobotanical knowledge of Musian city (Iran) as herbal medicine for anorexia

Scientific name	Herbal family	Persian name	The organ used	Therapeutic effect
Amygdalus communis L.	Rosaceae	Mountain almond	Oil, fruit	Appetizer
Centaurea solstitialis L.	Asteraceae	Yellow star-thistle	Head branch	Appetizer
Ficus carica	Moraceae	Fig	Fruit	Appetizer
Malva neglecta Wallr	Malvaceae	Mallow	leaf	Appetizer
Menta longifolia (L.) *Hudson*	Lamiaceae	Pennyroyal	aerial organs	Appetizer
Rhus coriaria L.	Anacardiacea	Sumac	aerial organs	Appetizer
Tymbra spicata	Lamiaceae	Thyme	aerial organs	Appetizer
Medicago sativa	Fabaceae	Alfalfa	Leaf	Appetizer
Linum usitatissimum	Linaceae	Flax	Seed	Appetizer
Achillea wilhelmsii C. *Kock*	Asteraceae	Yarrows	aerial organs	Appetizer
Alhagi persarum	Fabaceae	Alhagi	aerial organs	Appetizer
Alyssum campestre	Brassicaceae	Alyssum	aerial organs	Appetizer

Discussion

Anorexia mainly has neurological causes, but other causes include: anemia, constipation, snacking and addiction. Ethnobotany studies how the people of a particular nation, culture or region use native plants in that region. Considering that the methods and uses of medicinal plants in different regions, the present study was conducted with the aim of familiarizing with the culture of traditional use of medicinal plants in Musian region, western Iran, for the treatment of anorexia. In traditional medicine, almonds are used to stimulate appetite and relieve toothache (Shi. Et al. 2023). According to traditional medicine, corn flower has a warm and dry nature, and in cases of enhancing vision and anti-inflammation of the free side of the eyelids and conjunctivitis and cilia swelling, blood purifier and stomach tonic, reducing stomach secretions and useful for liver diseases, anti-fever and It is choleretic, anti-ascites and nerve pain reliever, anti-jaundice and reduces splenomegaly, anti-cough and hoarseness, appetite stimulant and invigorating, anti-bronchitis and memory booster, diuretic and laxative (Branco et al. 2023).

Figs are rich in nutritious minerals including iron, calcium and potassium. The amount of fiber in figs is higher than other fruits or vegetables. Fig increases body sweating. It is diuretic. If urine secretion is low, eating figs will increase it. It reduces body heat (Li et al., 2021). One of the properties of mallow is to help

treat wounds, urinary tract irritation, bladder infection, softness and smoothness of the skin, swelling of the mouth and throat, uterine tonic, laxative, diuretic, pain reliever, cough treatment, acne and insect bite treatment, skin itching treatment. It is used to treat eczema, treat gallstones, treat kidney stones, treat kidney inflammation, treat headaches, and relieve constipation, toothache, and insomnia (Al-Snafi et al., 2019). Sumac is used as a diuretic, treatment of hemorrhoids, infections and diabetes (Alsamri et al., 2021). In traditional medicine, alfalfa and flax are used to remove abdominal fat and cholesterol (Al-Snafi et al., 2021; Saleem et al., 2020). Among the healing properties of yarrow in traditional medicine, we can mention infection, stopping bleeding, strengthening the liver, reducing menstrual pains, relieving joint pain, strengthening the stomach and removing flatulence, treating bladder and kidney stones, removing skin spots and acne (Barda et al., 2021). Itching is used in the treatment of colds, diabetes, kidney stones, infections, anti-inflammation and pain relief (Zakerian et al., 2021). Alyssum is an anti-gout plant (Changaee et al., 2023). Pennyroyal is used for digestive disorders, liver, diabetes, heart, menstruation, and weight loss (Khalili et al., 2021). The change of society's approach to the use of herbal medicines goes back to the ancient place of plants among people and their traditional knowledge of plants and realizing the harmful effects of chemical medicines. Explaining the issue of using nature and the plants in it has been of interest to mankind since ancient times, and basically, the early man went through the stages of his development and evolution in nature (Zhao et al., 2019; Salmerón-Manzano et al., 2020). Ethnobotanical study of some medicinal plants of Kerman province identified the Lamiaceae family as the dominant species of the region, and their findings are in accordance with the findings of the present research (Sharifinia et al., 2021). In another study conducted by Dolatkhahi et al. (2012), Dolatkhahi et al. (2012) showed that the chicory family (Asteraceae) is the dominant species in Kazeron, which is consistent with the results of our study (Dolatkhahi et al., 2012).

Conclusions

The change of society's approach to the use of herbal medicines goes back to the ancient place of plants among people and their traditional knowledge of plants and realizing the harmful effects of chemical medicines. Identifying and introducing the local reserves of plants of each region, the forms and traditional uses of these plants, considering the ecological diversity of Iran, can provide useful information in the field of medicinal activities and the health system of society. Ethnobotany is a powerful tool to obtain valuable information from medicinal plants used in different cultures, which provides the basis for the discovery of new drugs. Medicinal plants of Musian region can be used as herbal medicine to treat anorexia.

Declarations

Conflict of interest

There is no conflict of interest.

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Consent for publications

The author approved the manuscript for publication.

Funding/support

None.

Authors' contributions

AS and SO conceived the research idea. SO supervised the study. MP and AS designed the work. SO carried out the experiment. AS and MP wrote the first draft of the manuscript. MP carried out the literature search. AS carried out the statistical analysis. All authors read and approved the final manuscript for publication.

Ethical considerations

Ethical issues (including plagiarism, misconduct, data fabrication, falsification, double publication or submission, redundancy) have been completely observed by the author.

References

Alsamri H, Athamneh K, Pintus G, Eid AH, Iratni R. Pharmacological and antioxidant activities of *Rhus coriaria* L.(Sumac). Antioxidants. 2021; 10(1):73. doi: 10.3390/antiox10010073.

Al-Snafi AE, Khadem HS, Al-Saedy HA, Alqahtani AM, El-Saber G. A review on *Medicago sativa*: A potential medicinal plant. International Journal of Pharmaceutical and Biological Science Archive. 2021; 1:22-33. https://doi.org/10.30574/ijbpsa.2021.1.2.0302

Al-Snafi AE. Medical benefit of *Malva neglecta*-A review. IOSR Journal of Pharmacy. 2019; 9(6):60-7.

Azarpendar M, Khalighi Z, Bahmani M, Abbasi N, Saki K. Identification of plant flora affecting common psychiatric disorders based on ethnobotanical knowledge of Ilam, Iran. Plant Biotechnology Persa. 2022; 4(2):57-63. doi: 10.52547/pbp.4.2.7

Baharvand Ahmadi B, Khajoei Nejad F, Papi S, Eftekhari Z. Phytotherapy for heart tonic: An ethnobotanical study in Dehloran City, Ilam Province, Western Iran. Caspian Journal of Environmental Sciences. 2023; 1-5. doi: 10.22124/cjes.2023.6192

Barda C, Grafakou ME, Tomou EM, Skaltsa H. Phytochemistry and evidence-based traditional uses of the genus Achillea L.: an update (2011–2021). Scientia Pharmaceutica. 2021; 89(4):50. https://doi.org/10.3390/scipharm89040050

Branco S, Irimia RE, Montesinos D. The introduction of an invasive weed was not followed by the introduction of ethnobotanical knowledge: a review on the ethnobotany of Centaurea solstitialis L.(Asteraceae). PeerJ. 2023;11:e15489. https://doi.org/10.7717/peerj.15489

Bruch H. Anorexia nervosa: therapy and theory. The American Journal of Psychiatry. 1982.

Changaee F, Goudarzi MA, Ghobadi R, Parsaei P. Antioxidant effects of methanolic extracts of *Anthemis Susiana* Nabelek, *Alyssum campestre*, and *Gundelia tournefortii*. Caspian Journal of Environmental Sciences. 2023:1-6. doi: 10.22124/cjes.2023.6714

Dolatkhahi M, Ghorbani Nohooji M, Mehrafarin A, Amini Nejad GH, Dolatkhahi A. Ethnobotanical study of medicinal plants in Kazeroon, Iran: Identification, distribution and traditional usage. Journal of Medicinal Plants. 12: 136 - 71. doi: 10.29252/jmp.2.70.197

Ebrahimi Y, AL-Baghdady HFA, Hameed NM, Iswanto AH, Shnain Ali M, Hammoodi HA, et al. Common fatty acids and polyphenols in olive oil and its benefits to heart and human health. Caspian Journal of Environmental Sciences. 2022: 1-7. doi: 10.22124/cjes.2022.5976

Graily afra A, Darroudi M, Darroudi M, Ouraji H, Keramat A, Safari R. Effects of supplementing diet with the alcoholic and nanoencapsulated nettle (*Urtica dioica*) extracts on growth performance and hematological indices of rainbow trout (*Oncorhynchus mykiss*). Aquatic Animals Nutrition. 2020; 5(2): 101-13. doi: 10.22124/janb.2020.16465.1090

Hosseinnia E, Khara H, Farokhroz M, Yousefi Jourdehi A, Kazemi R. Effects of dietary olive oil and butyl hydroxytoluene (BHT) on digestive and hepatic enzymes, liver and intestinal histology in young Persian sturgeon, *Acipenser persicus* in brackish water. Aquatic Animals Nutrition. 2020; 6(1): 27-41. doi: 10.22124/janb.2020.17136.1095

Keski-Rahkonen A, Hoek HW, Susser ES, Linna MS, Sihvola E, Raevuori A, et al. Epidemiology and course of anorexia nervosa in the community. American Journal of Psychiatry. 2007;164(8):1259-65. doi: 10.1176/appi.ajp.2007.06081388.

Khalili A, Fathi Arateh F, Sadat Salehi T, Jafari Mousavi FS. Preparation and evaluation of chitosan-carboxymethyl cellulose composite film with *Menta longifolia* extract for wound healing activity. Journal of Tissues and Materials. 2021;4(4): doi: 10.22034/jtm.2022.303868.1037

Li Z, Yang Y, Liu M, Zhang C, Shao J, Hou X, Tian J, Cui Q. A comprehensive review on phytochemistry, bioactivities, toxicity studies, and clinical studies on Ficus carica Linn. leaves. Biomedicine & Pharmacotherapy. 2021;137:111393. https://doi.org/10.1016/j.biopha.2021.111393

Mangena P, Dalvadi H, Bahmani M. Medicinal plants and treatment of itching: the most important native medicinal plants of Iran used in itching based on ethnobotanical documents. Plant Biotechnology Persa. 2021; 3 (2):32-37. http://pbp.medilam.ac.ir/article-1-80-en.html

Morley JE, Silver AJ. Anorexia in the elderly. Neurobiology of aging. 1988;9:9-16.

Roux H, Chapelon E, Godart N. Epidemiology of anorexia nervosa: a review. L'encephale. 2012;39(2):85-93. doi: 10.1016/s0197-4580(88)80004-6.

Saif R, Ali G, Ashfaq K, Zia S, Qureshi AR. Computational prediction of *Olea europaea* compounds as inhibitor of main-peptidase of SARS-CoV2. Advancements in Life Sciences. 2021;8(2):133-6.

Saki K, Goudarzi Z, Mazaheri Y, Shokri S, Parsaei P, Bahmani M. Identification of plant flora affecting anti-anxiety and anti-depression disorders based on ethnobotanical knowledge of the Arasbaran Region, Azerbaijan, Iran. Advancements in Life Sciences. 2023; 9(4):589-94.

Saleem MH, Ali S, Hussain S, Kamran M, Chattha MS, Ahmad S, et al. Flax (*Linum usitatissimum* L.): A potential candidate for phytoremediation? Biological and economical points of view. Plants. 2020; 9(4):496. doi: 10.3390/plants9040496

Salmerón-Manzano E, Garrido-Cardenas JA, Manzano-Agugliaro F. Worldwide research trends on medicinal plants. International Journal of Environmental Research and Public Health. 2020;17(10):3376. doi: 10.3390/ijerph17103376.

Serpell L, Treasure J, Teasdale J, Sullivan V. Anorexia nervosa: friend or foe?. International Journal of Eating Disorders. 1999;25(2):177-86.

Shahsavari S. An overview of the most important medicinal plants used in Iranian traditional medicine for the treatment of kidney stones: A mini-review article. Plant Biotechnology Persa. 2021;3(1):37-8. doi: 10.52547/pbp.3.1.4

Sharifinia F, Moharram Khani M, Moatar F, Baba Khanlou P, Khodami M. Ethnobotanical study of some medicinal plants of Khoh Jopar region of Kerman province. Journal of Kerman University of Medical Sciences. 2014; 21(1): 67-21. doi: 10.1016/j.jep.2014.04.003.

Shi T, Cao J, Cao J, Zhu F, Cao F, Su E. Almond (*Amygdalus communis* L.) kernel protein: A review on the extraction, functional properties and nutritional value. Food Research International. 2023:112721. doi: 10.1016/j.foodres.2023.112721.

Zakerian M, Derakhshan AR, Roudi F, Motavasselian M. Effects of manna of *Alhagi persarum* (Taranjabin) and *Portulaca oleracea* (Khorfeh) seed administration on nickel-induced allergic contact dermatitis: A case report. Journal of Nutrition, Fasting and Health. 20211;9(3):180-5. doi:10.22038/jnfh.2021.56063.1326

Zargari A. Medical plants. Tehran University, Tehran. 1994; 91102.

Zargari A. Medicinal plants. Tehran University, Tehran. 1997.

Zhao X, Chen L, Guo ZH, Liu T. Predicting drug side effects with compact integration of heterogeneous networks. Current Bioinformatics. 2019; 14(8):709-20. doi: 10.2174/1574893614666190220114644