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Investigation of medicinal plants used for weight loss in herbal markets of şanlıurfa, birth place of Abraham, Turkey

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Abstract

This study was carried out in order to investigate the medicinal plants sold for weight loss in Şanlıurfa between 2018 and 2019 years. Interviews were conducted with 55 informants and their age and educational status were also determined. According to this, the average age of about 55 herbal sellers is 45 (in 21–60 years range). Of the 55 informants, 14 are between the ages of 21-38 (25.45%), 23 are between ages of 40-50 (41.82%), and 18 are between the ages of 53-60 (32.72%). Education levels, on the other hand, were found to be primary and secondary school graduates. Educational status is the most high school graduate with a rate of 43.63%, 30.90% primary, 16.36% secondary and 9.11% are university graduates. As a result of the research carried out in the herbal sellers in Şanlıurfa, 40 taxa belonging to 23 families and 39 genera were obtained for weight loss. The most taxa-bearing families are Lamiaceae 5 (12%), Apiaceae 4 (10%) and Asteraceae 3 (7%). In addition, the contents of 25 compounds sold for weight loss were determined. Local and scientific names of plants were determined. Photographs of plants and compositions of the researched herbal extracts were also taken.

Keywords: Herbal seller, phytotherapy, şanlıurfa, obesity, weight loss

Introduction

This study was carried out to investigate the medicinal plants for weight loss at the herbal markets of Şanlıurfa, south-east Anatolia. Southeastern Anatolia Region has an area of 59,176 km² and is the second smallest region of Turkey.

Şanlıurfa is known in ancient times as Edessa, is a city with a population of over 2 million residents in south-eastern Turkey. It is a multiethnic city with a Turkish, Kurdish, and Arab population. It is situated on a plain about eighty kilometres east of the Euphrates River. Şanlıurfa, according to Jewish and Muslims, is the birth place of Abraham.

Today, the number of plant species on earth is considered to be between 250,000-500,000. According to WHO records, a large part of the world population (70-80%) uses “traditional medicine” for treatment or prevention. The medicinal plant species used for this purpose is estimated to be around 70,000. 21,000 plant species have been found suitable for drug preparation [1]. Turkey has a wide variety of plants used for medicinal purposes. It has been determined that up to 600 species of medicinal plants grow naturally.

The plants played very important role in human life in Turkey. Turkey's flora, in terms of species richness, is among the few countries in the world. In Turkey, there are 167 families, 1320 genera, 9996 species, 1989 subspecies and a total of 11707 taxa. 3649 taxa of these are endemic [2-4]. Landforms and climate diversity in Turkey, has provided great benefits in terms of plant diversity.

Today, plants used in phytotherapy are also called “medicinal plants” [5]. The habits of treating diseases by using medicinal plants are increasing day by day under the name of “alternative medicine”, “traditional medicine” or “complementary medicine”. In addition, natural medicine, folk medicine, integrative medicine, folkloric medicine, holistic medicine, supportive medicine, etc. are also used in different countries [6]. Scientific researches on the active ingredients of medicinal plants have gained speed due to the fact that the active ingredients obtained from herbal drugs are cheaper and easier to obtain than synthetic ones [5]. This interest is especially widespread among women who want to lose weight [7].

Obesity and overweight are considered as an important health problem that has become widespread in western societies and developing countries due to reasons such as daily lifestyle

and eating habits⁷⁻⁸. A study conducted in the United States states that the widespread eating disorders have increased significantly in the past 20 years. In addition, more than 90% of such eating disorders are seen in women^[9].

The plants commonly used in weight loss regimens and diets are preferred as tea and are named as "herbal teas"¹⁰. Herbal teas (medicinal teas) are defined in the European Pharmacopoeia as: "Orally used aqueous preparations prepared by maceration, decoction and infusion of one or more drugs, they are prepared before use"^[11]. It has become popular due to its much lower side effects.

Today, Anatolian people, who still have not lost their faith in herbal medicines, go to the doctor and apply the diagnosis and treatment of modern medicine, as well as using the herbs they receive from herbal sellers in some diseases as a preventive and therapeutic^[12]. In almost every region of Turkey, especially information about medicinal herbs, has transferred from generation to generation^[13].

Recently the Regulation on Traditional and Complementary Medicine practices has been published by the Ministry of Health in Turkey. With this latest regulation published by the Ministry of Health, it is seen that it aims to fill the gaps in the field of traditional and complementary medicine, and to prevent practices by unauthorized persons and without indications.

In Turkey, the herbal sellers known as "Aktar (herb seller)", used for the group of tradesmen who provide the materials required in drug production comes from the word "akarir", which means drugs in Arabic^[14]. Also known as "Akkar" or "Attar" during the Seljuks and Ottomans, they sell animal and mineral drugs as well as herbal drugs^[14]. Aktar, which is one of the most important milestones of folk medicine as a result of many years of experience, has lost its effective value and turned into establishments that sell only medical herbs and spices^[15]. The number of real herbal sellers that have turned into spice shop nowadays has decreased significantly^[12]. However, despite all these developments, the so-called "Spice Shop" or "Aktar Shop" is an indication that a part of the public continues to prepare their medicines in their own kitchen with the pieces of plants they bought for treatment purposes^[16]. People use the medicinal plants they receive from herbal sellers individually, as a mixture or in ready mixes, without questioning the thought that they are completely natural and harmless^[17]. However, contrary to what is known, treatment with medicinal plants is an important issue that cannot be entrusted to spice makers since it can have harmful side effects in medicinal plants^[18]. Since the various organs of the plant, which are defined as herbal drugs, contain different active substances that do not resemble each other, people who are interested in medicinal plants should at least have some basic information about the structure, organs and functions of these organs. It should be well known which method, which plants, and in what proportions to use. Otherwise, it should be remembered that negativities that may result in death may be encountered^[18].

The aim of this study to determine the plants sold for weight loss purposes in herbal markets, to determine their local and scientific names, to investigate of whether there are any side effects of plants used for weight loss, to inform the public correctly, to compile the scientific studies related to herbal treatment on weight loss and to look at the latest state of legal regulations on phytotherapy in Turkey.

This study is important in terms of determining treatment methods in the field of traditional and complementary medicine against constipation, obesity and overweight in the

region. Regarding weight loss, very fatal cases have been happening lately and our people are misguided through the media, there is a need to inform the public correctly for natural treatment.

We believe that this study will fill a gap in the field of phytotherapy for weight loss.

Some of the researches related to medicinal plants and weight loss in the literature searches are^[8, 12, 15, 18, 19-42].

Methodology

Study area

In this study, wild and cultivated plants sold in herbal sellers in Şanlıurfa, were investigated between 2018 and 2019 years. Şanlıurfa is located in the Middle Euphrates department of the Southeastern Anatolia Region. Şanlıurfa province is located at Turkey with the gps coordinates of 37° 9' 29.9988" N and 38° 47' 30.0048" E. Provincial population as of the end of 2020: 2,073,614. The area of the province is 19,242 km² and at an average of altitude of 500 m above sea level^[43].

Herbal sellers were visited periodically for the determination of medicinal plants sold for weight loss in districts of Birecik, Bozova, Ceylanpınar, Eyyübiye, Haliliye, Hilvan, Karaköprü, Siverek, Suruç and Viranşehir, Şanlıurfa, Turkey (Figure 1).

It is a city where different ethnic people, especially Turkish, Kurdish, Arab and Zaza, live together in brotherhood.

The economic activities of the city are mainly agriculture, animal husbandry and tourism. The city has great importance and potential as a tourism destination in Turkey especially for faith tourism. A total of 850,000 tourists visited the city, known for its colorful bazaars, historic mosques and Göbeklitepe, which has been dubbed the world's oldest temple complex and was built around 9500 B.C.^[43]. The World's First Temple, Gobeklitepe, a pre-historic site, about 15 km away from the city of Sanliurfa, has been discovered recently. Gobeklitepe was inscribed on the UNESCO World Heritage Sites List in 2018. Göbeklitepe is located in Upper Mesopotamia, a region which saw the emergence of the most ancient farming communities in the world. Research shows that the ancestor of wheat, an important cultural herb, was grown in this region. The biggest indicator of this are the einkorn grains, a wild wheat species, which were found in the soil of the Göbeklitepe. Other plant residues identified in the region are wild species of almonds and groundnuts^[43].

It is a very old and one of the most beautiful cities of the eastern Turkey. It was initially named Edessa. With a history of 12,000 years, Şanlıurfa, thought by some to be the ancient city of Ur, birth place of prophet Abraham, proudly exhibits the legacy of all the civilisations that have prospered in the region. The city was originally called Urfa but later awarded the title "Şanlı", or "glorious", for the role it played during the Turkish War of Independence in the 1920s.

Climate and Vegetation

Climate: Şanlıurfa generally has a terrestrial climate, summers are very dry and hot, winters are rainy and relatively warm. The province of Şanlıurfa enters the "semi arid" climate region of the Mediterranean climate region^[44]. According to the latest data, the average annual temperature in the province of Şanlıurfa is 18.7 °C., the average temperature is 39.4 °C in July and the average low temperature is 3.2 °C in January. The average annual rainfall is 457.8 mm.

Vegetation: 60% of the soil consists of cultural areas and 38% consists of meadows and pastures. The forest and shrub rate is very insufficient and it is 0.6%. There are also mountain slopes, stream edges, high places, forests and bushes. Forest

residues such as *Quercus* L. (oak), menengic plant (*Pistacia terebinthus* L.), *Populus* L. (poplar), *Pistacia khinjuk* Stocks (wild pistachio tree), *Salix* L. (willow) and *Crataegus* L. (hawthorn) are found on a provincial basis. In general, there are steppe-looking natural areas in herbaceous form. In spring, chamomile (*Anthemis* spp.), *Crocus* (*Crocus* spp.), Violet (*Viola* spp.), Poppy (*Papaver* spp.), Buttercups

(*Ranunculus* spp.), *Kandamla* (*Adonis* spp.), Ballues (*Lamium* spp.), Plants such as mullein berries (*Verbascum* spp.), thistles (*Cirsium* spp., *Carduus* spp.), lovers (*Astragalus* spp.), shepherd's pads (*Acantholimon* spp.), cornflowers (*Centaurea* spp.) and Hazeran (*Delphinium* spp.). Plant associations formed especially with the abundance of Poaceae (Poaceae) and Fabaceae (Legumes) are characteristic [45].

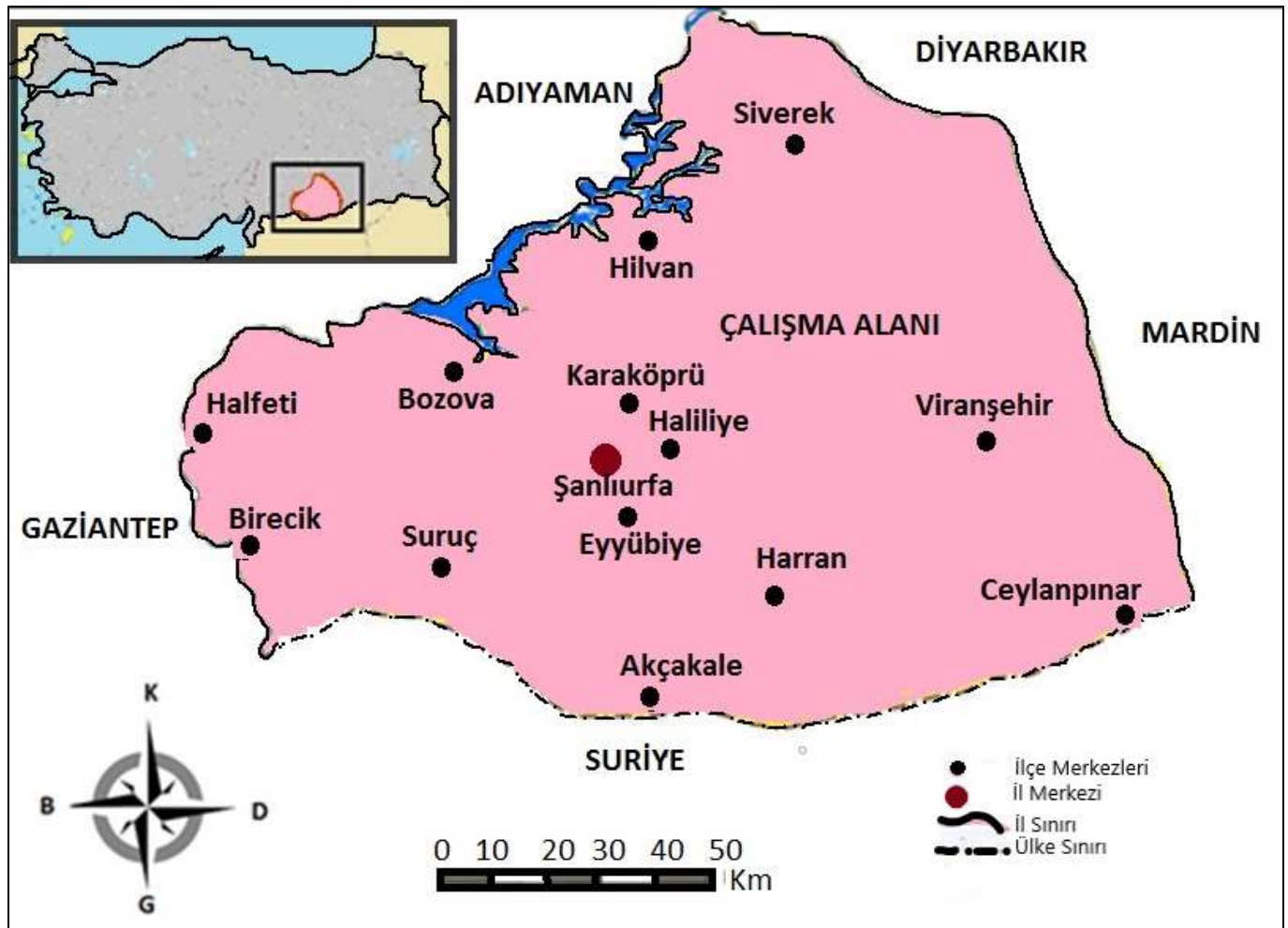


Fig 1: Map of the study area

Plant materials and data

This study was carried out for the determination of medicinal plants sold in Şanlıurfa towns for the purpose of weight loss. Herbal sellers in Şanlıurfa were visited periodically, and notes about the names and usage areas of plants and compositions were obtained during the studies. Fifty five herbal sellers were randomly chosen taking into account the easiness of contact and asked about losing weight plants by interview. All herbal sellers were informed about the aim of the study. All plants indicated by the herbal sellers were purchased and identified. Photographs of plants sold for weight loss were taken in herbal markets. Latin names, local names and compositions of the plants have also been revealed through this research. In addition, in this study, the ingredients, manufacturers and usage purposes of medicinal plants have been determined.

The points to be considered during the herbal sellers visits were:

1. Is the sale of plants open or packaged
2. Storage conditions of plant
3. Whether there are any products sold other than medicinal plant
4. Whether the herbal sellers have experience

5. Whether the plants sold are labeled

Botanical identification

Plant samples sold in herbal sellers were used as material and their scientific identification was made. Support was received from expert academicians for plant samples that were difficult to identify. The number of the collector were given to plant samples. They were determined at family, genus and species level. The ethnobotanical literature were cited as originally as possible, to express and describe the folk use. All reported medicinal species were identified with the help of the available literature and Flora books, such as Flora Turkey [2,3]. The plant specimens were prepared and processed according to the plant taxonomic method [46]. The plant samples obtained in the research are stored in herbarium of Harran University Faculty of Arts and Sciences (HARRAN). In this study, scientific names of plant species were checked for accuracy according to The Plant List database (www.theplantlist.org).

Demographic characteristics of participants

Our research was conducted in 40 herbal sellers shops selected from different districts. These districts are Birecik,

Bozova, Ceylanpınar, Eyyübiye, Haliliye, Hilvan, Karaköprü, Siverek, Suruç and Viranşehir, Şanlıurfa, Turkey. The name, age and educational status of the informants are determined. Details of the informants were recorded via face-to-face interviews. The average age of about 55 herbal sellers is 45 (in 21–60 years range). Of the 55 informants, 14 are between the ages of 21-38 (25.45%), 23 are between ages of 40-50 (41.82%), and 18 are between the ages of 53-60 (32.72%). Education levels, on the other hand, were found to be primary and secondary school graduates. Educational status is the most high school graduate with a rate of 43.63%, 30.90% primary, 16.36% secondary and 9.11% are university graduates.

Questions included in the ethnobotanical Information forms are:

- Which plants that are used for weight loss
- Local names given to the plant
- Use of the plant
- Which parts of the plant are used

Herb sellers were randomly chosen taking into account the easiness of contact and asked about losing weight plants by interview. General images of the herbal sellers determined in the research area in Figure 2, Figure 3 and Figure 4.



Fig 2: One of the general view of herbal sellers in Şanlıurfa



Fig 3: The general view of herbal sellers Bazaar in Şanlıurfa



Fig 4: Interview with herb sellers

Results

The information given in this study is the compilation information obtained as a result of interviews with Aktars (herb seller) in Şanlıurfa. Do not use it in all your diseases without consulting a doctor.

The findings of our study, plants and compounds (mixtures) sold for weight loss at herbal sellers in Şanlıurfa is summarized in Table 2 and Table 3.

Table 2: The list of medicinal plants sold, especially for weight loss, in herbal sellers of Şanlıurfa

Botanical name and voucher specimen	Family	Vernacular name (Turkish)	Utilization Method	Parts used	Use
<i>Petroselinum crispum</i> (Mill.) AW. Hill AA 1075	Apiaceae	Maydanoz	Infusion	Above ground parts	Fat burning, Belly melting property, weight loss
<i>Coriandrum sativum</i> L. AA 1014	Apiaceae	Aşotu, Kuzbere, Kezbera	Infusion seeds are brewed crushed	Seed	Weight loss, Secretions of the stomach.
<i>Foeniculum vulgare</i> Mill AA 1011	Apiaceae	Rezene	Infusion Seeds added to the compositions	Fruits, Seeds	Increasing breast milk, Weight loss
<i>Pimpinella anisum</i> L. AA 1025	Apiaceae	Anason	Decoction	Fruits, seeds	Burn belly fat, Weight loss
<i>Ilex paraguayensis</i> St. Hill. AA 1009	Aquifoliaceae	Mate	Infusion	leaves	Weight loss
<i>Achillea oligocephala</i> DC. AA 1028	Asteraceae	Civanperçemi	Decoction	flower, above ground part, aromatic oil	Healing the pain of hemorrhoid, Weight loss
<i>Helichrysum orientale</i> (L.) DC. AA 1023	Asteraceae	Altun Otu, Ölmez Çiçek, Sarısolmaz	Infusion	Above-ground parts, flowering parts	Diuretic and Kidney diseases, weight loss
<i>Matricaria chamomilla</i> L. <i>chamomilla</i> AA 1001	Asteraceae	Papatya, mayıs papatyası	Infusion	flowers	Common cold, cough, Antipyretic, weight loss
<i>Chenopodium quinoa</i> Willd. AA 1074	Chenopodiaceae	Kinoa	Infusion	Seed	Weight loss, speed up fat burning
<i>Juniperus communis</i> L. <i>communis</i> AA 1066	Cupressaceae	Ardıç	Infusion	fruit, aromatic oil, tincture,	Weight loss diuretic, strengthening the stomach
<i>Erica vulgaris</i> L. AA 102	Ericaceae	Funda	Infusion	Leaves	Lower kidney Stones, weight loss

<i>Cassia angustifolia</i> L. AA 1010	Fabaceae	Açlık otu, Aşlık otu, deve gözü,	Infusion	Leaf, fruit	Weight lose accelerate metabolism, laxative
<i>Cassia marilandica</i> L. AA 1017	Fabaceae	Sinameki	Infusion	Leaf, fruit	Weight loss
<i>Mentha piperita</i> L. AA 1020	Lamiaceae	Nane	Infusion	Above ground parts	Common cold and flu, weight loss
<i>Salvia hispanica</i> L. AA 1022	Lamiaceae	Chia tohumu	Infusion	Seed	Weight loss
<i>Rosmarinus officinalis</i> L. AA 1016	Lamiaceae	Kuşdili, Biberiye	Infusion	Leaves	Common cold and flu, weight loss
<i>Thymus fallax</i> fisch. & C.A.Mey AA 1018	Lamiaceae	Kekik	Infusion	Above-ground parts, thyme oil	Common cough, weight loss, fat burning
<i>Thymbra spicata</i> L. <i>spicata</i> AA 1077	Lamiaceae	Zahter	Infusion	Above Ground Parts	Bronchitis and sinusitis diseases, weight loss
<i>Cinnamomum verum</i> J. Presl AA 1008	Lauraceae	Tarçın	Decoction	Shell	Weight loss, stabilizing blood sugar
<i>Laurus nobilis</i> L. AA 1024	Lauraceae	Defne	Infusio, used with cinnamon and honey	Leaf, fruit, seed, laurel oil,	Rheumatic pain, skin nourishing Weight loss
<i>Persea americana</i> Mill. AA 1067	Lauraceae	Avokado	consumed fresh, Infusion	Leaf, Fruit	Weight loss
<i>Linum usitatissimum</i> L. AA 1012	Linaceae	Keten	Infusion	Seed	Prevent regional lubrication, Weight loss
<i>Hibiscus sabdariffa</i> L. AA 1015	Malvaceae	Hibiskus,	Infusion recommended with honey	Flowers	strengthens the immune system, weight loss
<i>Moringa oleifera</i> Lam AA 1058	Moringaceae	Moringa	Infusion	leaves	Weight loss
<i>Syzygium aromaticum</i> (L.) Merr. & Per AA 1026	Myrtaceae	Karanfil	Infusion Used with cloves, cinnamon and Ginger root	fruit, powder flower,	Remove bad breath, <i>weight loss</i>
<i>Eragrostis tef</i> [Zucc.] Trotter) AA 1063	Poaceae	Teff tohumu	Infusion recommended with yogurt.	seeds	Weight loss, helps in digesting
<i>Zea mays</i> L. AA 1076	Poaceae	Mısır püskülü	Infusion with cherry stalks	Tassel	Weight loss, used for lowering urine and bladder sand
<i>Avena sativa</i> L. AA 1019	Poaceae	Yulaf	Infusion	fruit and seed	Weight loss, is also said to keep sugar in balance
<i>Portulaca oleracea</i> L. AA 1078	Portulacaceae	Semizotu, parpar, pırpırım	Fresh for salad	Above ground part, seeds	Lowering cholesterol and balancing blood pressure, weight loss
<i>Nigella sativa</i> L. AA 1013	Ranunculaceae	Çörekotu, kara çörek	Seeds crushed, Seed oil consumed	seeds, black seed oil	seeds are used externally against hair, strengthen the immune system, prevent anemia, increase milk secretion, weight loss
<i>Frangula alnus</i> Mill. AA 1027	Rhamnaceae	Acı çehre	Infusion	dried fruit, seeds	Weight loss, fat reduction, regulation of blood sugar and cholesterol
<i>Ziziphus jujuba</i> Mill. AA 1069	Rhamnaceae	Hünnap	Infusion adding ginger, pear, and lemon	Leaf, fruit, fixed oil Dry fruit,	Strengthens the immune, liver diseases, Weight loss
<i>Prunus armeniaca</i> L. AA 1072	Rosaceae	Kayısı	Infusion, eat three dried apricots on an empty stomach	fruit, kernel	Weight loss, working the intestines
<i>Rosa canina</i> L. AA 1004	Rosaceae	Kuşburnu, Şılan	Infusion	Fruit, Seed	urine enhancer, strengthening immune, Weight loss
<i>Camellia sinensis</i> (L.) Kuntze AA 1002	Theaceae	Yeşil çay	Infusion	Leaf	Weight loss, blood sugar regulating, cholesterol balancing
<i>Tilia platyphyllos</i> Scop. AA 1070.	Tiliaceae	Ihlamur	Infusion, with consisting of rosehip, golden grass and linden	Flowers	flu and colds, weight loss
<i>Urtica dioica</i> L. AA 1071	Urticaceae	Isrgan	Infusion eaten freshy, crushed seeds	Seeds, dry leaves	Hormone balancer, urine enhancer, regulate blood pressure, cancer, diuretic properties, weight loss
<i>Aloe vera</i> (L.) Burm.f. AA 1079	Xanthorrhoeaceae	Sarısabır	Mixed with pineapple, ginger and honey	Leaves, Juice, aromatic oil, gel, cream	skin irritations, moisturizing the body, weight loss,
<i>Curcuma longa</i> L. AA 1006	Zingiberaceae	Zerdeçal	Infusion with honey	root	Diabetes, cancer, stomach diseases, cold diseases, keeps blood sugar, remove excess fat, Weight loss
<i>Zingiber officinale</i> L. AA 1007	Zingiberaceae	Zencefil	Infusion With cinnamon, mint and lemon	Aromatic oil, underground body (fresh or dried)	Common cough, stimulate stomach, remove toxins, Weight loss

Table 3: Plant compositions (mixtures), manufacturer Companies and contents, sold for weight loss in herb sellers in Şanlıurfa

Name of Product	Manufacturer Companies	Content
Mixed herbal tea of Alder Buckthorn (<i>Frangula alnus</i>)	Lokman Sena Sultan	<i>Frangula alnus</i> (seeds) <i>Camellia sinensis</i> (leaf) <i>Ilex paraguayensis</i> (leaf) <i>Rosmarinus officinalis</i> (leaf) <i>Thymus fallax</i> (above ground) <i>Erica vulgaris</i> (leaf)
Mixed herbal tea of Tinnevelly senna (<i>Cassia angustifolia</i>)	Biorganix life	<i>Salvia hispanica</i> (seeds) <i>Cassia angustifolia</i> (leaf) <i>Rosmarinus officinalis</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Thymus fallax</i> (above ground) <i>Lycium barbarum</i> (fruit) <i>Matricaria chamomilla</i> (flowers) <i>Foeniculum vulgare</i> (seeds) <i>Myrtus communis</i> (leaf) <i>Laurus nobilis</i> (leaf)
Mixed herbal tea of Anise (<i>Pimpinella anisum</i>)	Ress Dermolife	<i>Pimpinella anisum</i> (seeds)
Mixed herbal tea of alligator pear (<i>Persea americana</i>)	Nursima	<i>Persea americana</i> (leaf) <i>Achillea oligocephala</i> (flower) <i>Matricaria chamomilla</i> (flower) <i>Thymus fallax</i> (leaf) <i>Rosa canina</i> (fruit) <i>Fumaria officinalis</i> (leaf)
Mixed herbal tea of White tea (<i>Camellia sinensis</i>)	Fito viston Fitovision	<i>Camellia sinensis</i> (leaf) <i>Citrus bergamia</i> (leaf) <i>Cinnamomum verum</i> (shell) <i>Syzygium aromaticum</i> (fruits) <i>Ilex paraguayensis</i> (leaf) <i>Citrus × limon</i> (shell)
Mixed herbal tea of rosemary (<i>Rosmarinus officinalis</i>)	Nursima	<i>Rosmarinus officinalis</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Cassia marilandica</i> (leaf) <i>Thymus fallax</i> (leaf) <i>Salvia officinalis</i> (leaf) <i>Lavandula stoechas</i> (flower) <i>Melissa officinalis</i> (leaf) <i>Foeniculum vulgare</i> (seeds) <i>Rosa canina</i> (fruit) <i>Persea americana</i> (leaf) <i>Fumaria officinalis</i> (leaf) <i>Matricaria chamomilla</i> (flowers) <i>Achillea oligocephala</i> (Flowers)
Mixed herbal tea of Yarrow (<i>Achillea oligocephala</i>)	Lokman Sena Sultan Nursima Fito vision	<i>Achillea oligocephala</i> (flowers) <i>Urtica dioica</i> (leaf) <i>Cichorium endivia</i> (above ground) <i>Olea europaea</i> (leaf)
Fantastic 4-mixed herbal tea	Esila	<i>Frangula alnus</i> (seeds) <i>Salvia hispanica</i> (seeds) <i>Lycium barbarum</i> (fruit) <i>Prunus armeniaca</i> (fruit)
Mixed herbal tea of Phyto- L	Fitovision	<i>Hibiscus sabdariffa</i> (flowers) <i>Prunus domestica</i> subsp. <i>insititia</i> (fruit) <i>Prunus avium</i> (fruit stalk) <i>Camellia sinensis</i> (leaf) <i>Rhamnus saxatilis</i> (fruit) <i>Rhamnus frangula</i> (shell) <i>Erica vulgaris</i> (leaf)
Mixed herbal tea of Phytoform	Şiffahome	<i>Cassia marilandica</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Achillea oligocephala</i> (flowers) <i>Foeniculum vulgare</i> (seeds) <i>Rosa canina</i> (fruit) <i>Urtica dioica</i> (leaf) <i>Juniperus communis</i> subsp. <i>communis</i> (fruit) <i>Betula pendula</i> (leaf) <i>Rhamnus frangula</i> (shell) <i>Prunus armeniaca</i> (fruit)
Mixed herbal tea of Goji berry (<i>Lycium barbarum</i>)	Mecitefendi	<i>Ilex paraguayensis</i> (leaf) <i>Camellia sinensis</i> (leaf)

		<i>Betula pendula</i> (leaf) <i>Rosmarinus officinalis</i> (leaf) <i>Lycium barbarum</i> (fruit) <i>Urtica dioica</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Beta vulgaris</i> (juice) <i>Glycyrrhiza glabra</i> (root) <i>Foeniculum vulgare</i> (seeds)
Mixed herbal tea of Ginseng	Mindivan	<i>Panax ginseng</i> (roots) <i>Mentha piperita</i> (above ground)
Mixed herbal tea of <i>Ginkgo</i>	Patina	<i>Ginkgo biloba</i> (leaf)
Herbal mixtured Tea of Hel-Dem	Hel-Dem	<i>Rosmarinus officinalis</i> (leaf) <i>Thymus fallax</i> (leaf) <i>Foeniculum vulgare</i> (seeds) <i>Zea mays</i> (crest) <i>Cassia marilandica</i> (leaf) <i>Camellia sinensis</i> (leaf) <i>Citrus × limon</i> (shelter) <i>Erica vulgaris</i> (flower) <i>Prunus avium</i> (stalk)
Mixed herbal tea of Apricot & Rosemary	Çınar Esila Akzer Fitoform	<i>Prunus armeniaca</i> (fruit) <i>Rosmarinus officinalis</i> (leaf) <i>Camellia sinensis</i> (leaf) <i>Cassia angustifolia</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Urtica dioica</i> (leaf) <i>Juniperus communis</i> (fruit) <i>Tetraclinis articulata</i> (gum) <i>Fumaria officinalis</i> (leaf) <i>Myrtus communis</i> (leaf) <i>Foeniculum vulgare</i> (seeds) <i>Laurus nobilis</i> (leaf) <i>Pimpinella anisum</i> (seeds) <i>Thymus fallax</i> (leaf) <i>Matricaria chamomilla</i> subsp. <i>chamomilla</i> (flowers) <i>Prunus avium</i> (stalk) <i>Zea mays</i> (crest) <i>Frangula alnus</i> (seeds) <i>Ilex paraguayensis</i> (leaf) <i>Tribulus terrestris</i> (above ground) <i>Camellia sinensis</i> (leaf) <i>Myrtus communis</i> (leaf)
Mixed herbal tea of Quinoa	Nurs	<i>Chenopodium quinoa</i> Willd. (seeds)
Mixed herbal tea of Cherry stalk- Corn crest	Akzer	<i>Prunus avium</i> (stalk) <i>Zea mays</i> (crest) <i>Persea americana</i> (leaf) <i>Melissa officinalis</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Foeniculum vulgare</i> (seeds) <i>Cassia marilandica</i> (leaf) <i>Camellia sinensis</i> (leaf) <i>Rosmarinus officinalis</i> (leaf) <i>Ilex paraguayensis</i> (leaf)
Kaffkaform Herbal mixed Tea	Şekeroğlu	<i>Lycium barbarum</i> (fruit) <i>Salvia hispanica</i> (seeds) <i>Prunus armeniaca</i> (fruits) <i>Cassia marilandica</i> (leaf)
Mixed herbal tea of Linen	Fitovision	<i>Linum usitatissimum</i> (seed)
Mixed herbal tea of Moringa (<i>Moringa oleifera</i>)	Superfoods	<i>Moringa oleifera</i> (leaf) <i>Taraxacum officinale</i> (root) <i>Cinnamomum verum</i> (Shell) <i>Zingiber officinale</i> (underground part) <i>Persea americana</i> (leaf) <i>Frangula alnus</i> (seeds) <i>Ilex paraguayensis</i> (leaf) <i>Prunus avium</i> (stalk) <i>Arthrospira platensis</i> (powder)
Herbal tea of Yerba mate	Fitovision	<i>Ilex paraguayensis</i> (leaf)
Herbal tea of Plates form	Hekimhan	<i>Frangula alnus</i> (seeds) <i>Carnitin</i>
Herbal tea of Teff (<i>Eragrostis tef</i>)	Teaherb Teff life slim	<i>Eragrostis tef</i> (seed) <i>Abelmoschus esculentus</i> (flowers)

		<i>Rosmarinus officinalis</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Coffea arabica</i> (fruit) <i>Tetraclinis articulata</i> (gum) <i>Gum tragacanth</i> (gum) <i>Cinnamomum verum</i> (shell) <i>Ilex paraguayensis</i> (leaf) <i>Rosa canina</i> (fruit) <i>Camellia sinensis</i> (leaf) <i>Chenopodium quinoa</i> (seed) <i>Salvia hispanica</i> (seeds) <i>Frangula alnus</i> (shelter) <i>Carthamus tinctorius</i> (seed) <i>Prunus avium</i> (stalk) <i>Melissa officinalis</i> (leaf)
Mixed herbal tea of Green tea (<i>Camellia sinensis</i>)	Fitovision	<i>Camellia sinensis</i> (leaf)
Mixed herbal tea of Zumba form	Patina	<i>Rosmarinus officinalis</i> (leaf) <i>Cassia marilandica</i> (leaf) <i>Erica vulgaris</i> (leaf) <i>Laurus nobilis</i> (leaf) <i>Salvia hispanica</i> (seeds) <i>Frangula alnus</i> (seeds) <i>Lycium barbarum</i> (fruit) <i>Prunus armeniaca</i> (fruit)

Discussion

This study was conducted between 2018 and 2019 years. It is aimed to determine the herbal products sold for weight loss in the herbal seller in Şanlıurfa, Turkey. A total of 20 sources were interviewed for this study. It was determined that 40 plants and 25 mixtures belong to 24 families were sold for weight loss purposes. In addition, the content of the 25 plant compositions sold for weight loss, local companies and the scientific names of medicinal plants were determined.

The herbal sellers we interviewed include the herb sellers in the central districts of Haliliye, Eyyübiye and Karaköprü. The herbal sellers are concentrated in the Attar market in the Haşimiye region of Eyyübiye central district of Şanlıurfa, or in the Tenekeçiler bazaar. When we think in the context of folk medicine, the first name that comes to our mind in Şanlıurfa is Attar İsa. He was the most famous among the herb sellers in the Haşimiye market. However, when he died later, his children and grandchildren took over this profession. Demirkol Ticaret, Lokman Hekim Attar, the son of İsa, Güneş Attar, Dedeoğlu Gıda, Aktar Halepli Ahmet, Harran Baharatçılık, Demirkol Aktar, Saraç Attar, Aktar Abudrahmanoğlu and Hacı Yusuf Attar are among the most well known herb sellers in the attar market bazaar in Haşimiye. In the central district of Haliliye; Bahçelievler Attar, Yenişehir attar Market, Yenişehir attar market, Plant Market, Reyhan Herbal, Karacabey Urfa bazaar. There is only one herb seller in Karaköprü district, it is the grandson of Attar İsa, the first attar of Urfa, and is the workplace named Attar İsa, named after his grandfather. Some of the medicinal

plants are collected from the provinces throughout the city, while other common medicinal plants come from metropolitan cities such as Istanbul or from abroad.

According to our research, it has been determined that the medicinal plants sold in some herbal markets are usually packaged and prepared by specifying the dates of consumption as well as their production dates. In addition, it was observed that the plant content was also indicated on the packages. However, it has been observed that most plants sold for phytotherapy are in unpackaged and unhealthy conditions throughout the research shops. Different plants can be sold with the same name due to the name similarity in herbal markets. Lack of scientific names causes confusion. Employees are not informed about the storage conditions of plants, where and how they are collected. For this reason, the herbal sellers and employees who are selling must be trained.

Turkey is in a very long history of professional herbal sellers, has an important place in our folk culture [51-53]. Medicinal plants sold for weight loss in herbal markets in Şanlıurfa are sold legally under the name of food supplements or spices. However, the herbal drugs sold here were found to be out of control. Information such as scientific names, source, storage conditions, used parts, shelf life, and intended use of medicinal plants sold in herb sellers should be checked by the Ministry of Health.

In our study, the large families with the most taxa are; Lamiaceae 5, Apiaceae 4, Asteraceae 3, Lauraceae 3 and Poaceae 3 (Figure 5).

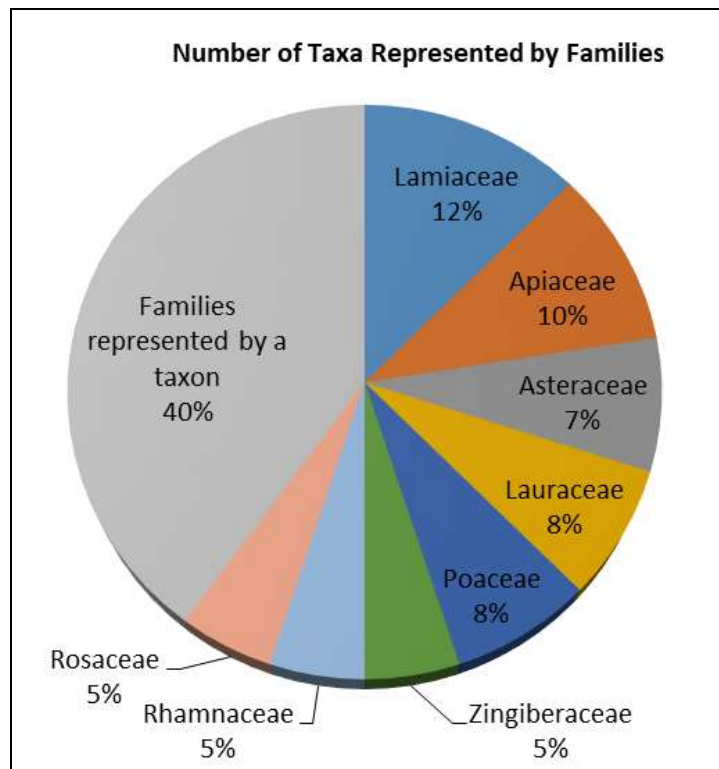


Fig 5: Number of taxa to which the families are represented

The average age of about 55 herbal sellers is 45 (in 21–60 years range). Of the 55 informants, 14 are between the ages of 21-38 (25.45%), 23 are between ages of 40-50 (41.82%), and 18 are between the ages of 53-60 (32.72%) (Figure 6).

most high school graduate with a rate of 43.63%, 30.90% primary, 16.36% secondary and 9.11% are university graduates (Figure 7).

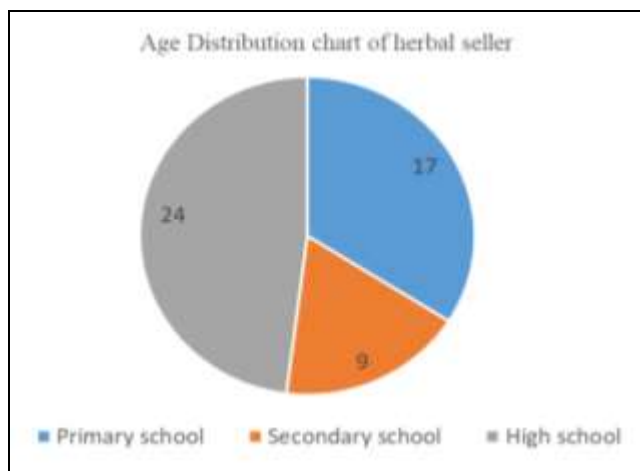


Fig 6: Age Distribution chart of herbal sellers

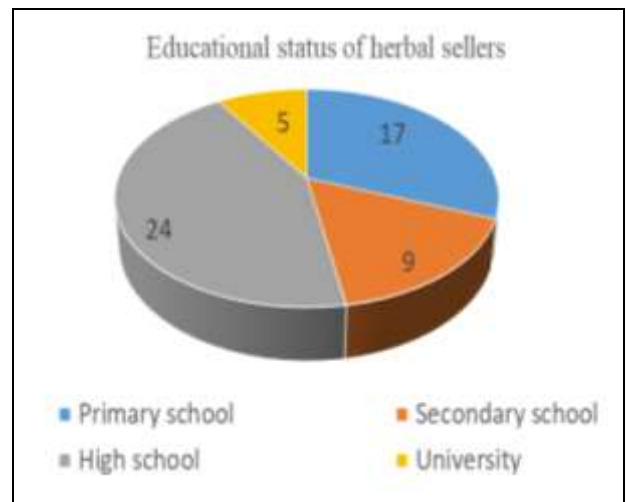


Fig 7: Educational status of herbal sellers

Education levels, on the other hand, were found to be primary and secondary school graduates. Educational status is the

Among other researches that are similar to our study [35, 48, 42, 49, 50].

Table 4: Comparison of our research with other related studies

Results of the studies	Present study	Plants sold in Gaziantep herbal sellers [47]	Plants sold in Kahramanmaraş Herbal sellers [25]	Plants for Phytotherapy in Pharmacies in Şanlıurfa [42]
Family number	24	-	-	70
Taxon number	40	122	178	144
Number of preparations	25	-	-	84
Number of informant	20	30	17	61

As a result, although medicinal plant treatment, which is frequently used in the world, in European countries and in Turkey, has increased, it is developing day by day. As a

solution to the problems in this regard, health teams should be emphasized and necessary information should be given to the public. Plants should not be used unconsciously and

uncontrolled both in diagnosis and treatment, especially in severe disease situations. Doctors who are competent and equipped in this field should be given more space in Turkey. In fact, many physicians can be given phytotherapy lessons to be more experienced in this field. Likewise, the plants should be produced under suitable conditions and the essential parts of the plants should be collected and processed. Storage should also be provided in hygienic environments. The products collected should be analyzed in the laboratory and those that are deemed inappropriate should not be placed on the market. Serious inspections should be made by the Ministry of Health on this issue. In any way, it should not be allowed for untrained people to sell in this regard, whether it is a pharmacist or a herbal sellers. Controls should be increased especially in these issues.

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