

## Medical plants used for treatment of gynecological disorders in Ottomans in the 15th century

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### ABSTRACT

**Aim:** The aim of the present study is to give a brief evaluation about plants used for the treatment of obstetric and gynecological conditions by using *Cerrâhiyyetü'l-Hâniyye* book which has been written by Serefeddin Sabuncuoğlu who was a famous surgeon in Anatolia in the 15th century.

**Materials and Methods:** Based on the *Cerrâhiyyetü'l-Hâniyye* book, we selected plants that are used for women health, and systematically arranged plants according to diseases. Plant species that detected in this book were compared with the plants of three works (Soranus' *On Gynecology*, Paulus Aeginata's *The Seven Books*, and Zahavi's *At Tasrif*).

**Results:** *Cerrâhiyyetü'l-Hâniyye* book contains 24 different medical plants for women health. Six plants found in *Cerrâhiyyetü'l-Hâniyye* were different from the other books compared. Sabuncuoğlu wrote about same 18 plants, which are typed by other authors for women health.

**Conclusion:** This study shade light on the Ottoman herbal remedy. Regard to plant treatment, difference between *Cerrâhiyyetü'l-Hâniyye* book and other books were submitted by the present study.

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### Introduction

According to the literature on the history of medicine, humankind used plants for treatment of diseases. Ancient and folk medicine was incorporated plants, mineral, or animal products particularly in Anatolia located between Asia and Europe [1–5]. The way of using herbal medicine in obstetrics and gynecological conditions were similar to the treatment of other diseases [6–10]. Medicine men (monks, witch doctors, and shaman) maintained the health of people by herbal products and surgical procedures in prehistoric culture occurred before the invention of writing [5,10,11]. Then, special prescriptions for women's health are available in written medical literature in Anatolia, such as Ancient Greece and Roman medicine in

the fifth century BC and until the 11th century AC [6,11–14].

Islamic medicine began to improve in 12th century in Anatolia. Islamic medicine is not at limited to religious medicine, but also includes all the medicine of the rich and varied cultures of the Islamic community. The authors wrote many scientific books in this period. They have been dominant since about the 13th century and strongly influenced the Ottoman physician of Turkey [2,6,11,15,16]. Serefeddin Sabuncuoğlu is one of the famous surgeons in Ottoman State. Şerefeddin Sabuncuoğlu (Amasya, 1385–1468) translated the 30th chapter of Zahravi's *At-Tasrif* dedicated to surgery into Turkish and wrote his book named *Cerrâhiyyetü'l-Hâniyye*. He wrote his experiences in his book by drawing

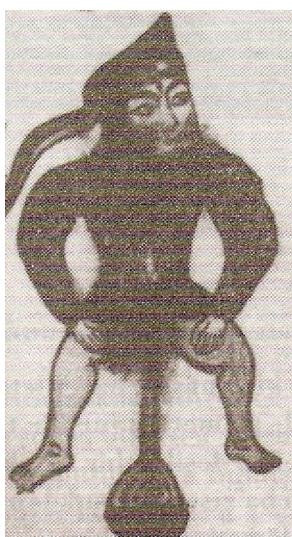
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miniatures (pictures) concerning the first medical illustrations in Islamic medicine in the 15th century (Fig. 1). “Cerrâhiyyetü'l-Hâniyye” was divided into chapters in a way similar to that was done in *At-Tasrif* [11,14]. Three copies of *Cerrâhiyyetü'l-Hâniyye* book were present today in Istanbul (two copies) and Paris (one copy). *Cerrâhiyyetü'l-Hâniyye* book consists of three chapters of surgical procedures and incisions, interventions, and herbal remedy. Sabuncuoğlu also wrote three books namely *Mürecebname*, *Müfid* (*Nazmü't-Teshil*), and *Akrabaddin* for physicians [11,12,17]. In this study, books of Sabuncuoğlu which were written in classical period were investigated. The medical plants used for obstetrics and gynecological conditions were compared to find similarities and differences between the *Cerrâhiyyetü'l-Hâniyye* book and scientific literature of ancient medicine.

## Materials and Methods

Plants that were used for women health in Şereffedin Sabuncuoğlu's *Cerrâhiyyetü'l-Hâniyye* book were systematically arranged according to diseases. Plant species that detected in this book compared with the three famous physicians books in the history of medicine such as Soranus, Paulus Aegineta, and Zahravi [10,11,14,16].

Four physicians, who practiced in the classical medicine era, were selected as resources according to chronological order. In this study, Soranus's *Gynekiea*, which was translated by Temkin into English and was published in 1991 under the name



**Figure 1.** Miniature shows fumigations for gynecological conditions. Fumigation instrument had been used instead for medical plants to open delivery of the placenta. Şereffedin Sabuncuoğlu drew a miniature painting of the procedure.

of “*On Gynecology*”; Zahravi's *At Tasrif*'s English version translated by Spink and Lewis; two volumes of Şereffedin Sabuncuoğlu's *Cerrâhiyyetü'l-Hâniyye*, prepared by İlter Uzel in a comparative way; and Paulus Aegineta's book, translated into English by Adams were used [10,11,14,16]. In addition, *Mücerebname* and *Akrabaddin* written by Sabuncuoğlu referenced as additional resources [12,17]. Plants prescribed in the books that are not specific to women's diseases were not included in our study.

## Results

Sabuncuoğlu's *Cerrâhiyyetü'l-Hâniyye* has been written in two volumes. The first volume of the book consists of 57 sections, drawings of operations scene and surgical procedures (54), instruments (7), and four incisions, one of them was about cauterization of the uterus. Eight of 98 issues in the second volume of this book has been written about women health. Sabuncuoğlu recommended surgical, dietetic, and pharmacologic treatment for obstetrics and gynecological conditions [11]. Commonly used Sabuncuoğlu's herbal formulas include decoctions, powders, pills, washes, fumigants, suppositories, and enemas. Decoctions and fumigation were dominant forms of pharmacologic therapy treatment of Sabuncuoğlu's works [11,12].

Descriptions of diseases, information on their treatment, and the names of plants are present in all the works investigated. Sabuncuoğlu used the terms of Greek physicians and discussed the subjects under the same titles. The plants present in his prescriptions were either a single or a combination of plants [10,11,14,16]. *Cerrâhiyyetü'l-Hâniyye* is a translation of Zahravi's *At-Tasrif* that is devoted to surgery [11,14].

Sabuncuoğlu's books for providing information for physicians contain nine chapters focused specifically on gynecology and obstetrics [11]. Şereffedin Sabuncuoğlu described nine obstetrics and gynecological conditions in the *Cerrâhiyyetü'l-Hâniyye*. Title of these conditions are hermaphroditism (70th Section), clitoridectomy (71st Section), the treatment of the children with vaginal occlusion or atresia (72nd Section), the treatment of the vaginal and vulval lesions (genital warts and pustules) (73rd Section), extirpation of fibrous tissue in vagina (74th Section), about abnormal delivery (75th Section), about the removal of the dead fetus (76th Section), about the removal of the fetus that died in the maternal uterus (77th Section), and

about the removal of the placenta (78th Section) (11) (Table 1).

Regard to gynecological conditions, Soranus, Paulus Aeginata, Zahravi, and Sabuncuoğlu used 19, 12, 26, and 24 of 51 different plants, respectively (Tables 1–3).

Zahravi and Sabuncuoğlu similarly used acacia and Dragon's blood for vaginal occlusion or atresia. Paulus Aeginata, Zahravi, and Sabuncuoğlu similarly used pomegranate, also Zahravi, Şerefeddin Sabuncuoğlu similarly used oak galls, sumac, and barley for genital warts and pustules. Paulus Aeginata, Zahravi, and Şerefeddin Sabuncuoğlu similarly used mallow and rose for the extirpation of fibrous tissue in the vagina. Paulus Aeginata and Sabuncuoğlu used birthwort for the extirpation of fibrous tissue in the vagina. Zahravi and Sabuncuoğlu similarly used liquorices extirpation of fibrous tissue in vagina. Paulus Aeginata and Zahravi similarly used fenugreek used for abnormal delivery. Zahravi and Şerefeddin Sabuncuoğlu similarly used sesame, marsh mallow, and myrrh for abnormal

delivery. Paulus Aeginata and Sabuncuoğlu similarly used figs for removal of the placenta. Soranus, Zahravi, and Sabuncuoğlu similarly used cassia for removal of placenta. Soranus and Zahravi similarly used artemisia for removal of the placenta. Zahravi and Şerefeddin Sabuncuoğlu similarly used cassia, chamomile, rue, and pennyroyal for removal of the placenta (Table 2).

In Cerrâhiyyetü'l-Hâniyye, 24 different plants are present for gynecological conditions. On the other hand, Sabuncuoğlu used same plants for different gynecological conditions in Cerrâhiyyetü'l-Hâniyye.

Paulus Aeginata and Sabuncuoğlu used same seven plants (birthwort, figs, iris, mallow, pomegranate, and rose oil); Soranus and Sabuncuoğlu used same three plants (myrrh, rose, and cassia); Zahravi and Sabuncuoğlu used same 14 plants (acacia, dragon's blood, barley flour, cassia, liquorices root, mallow, marshmallow, oak galls, pennyroyal, pomegranate rind, rose oil, sesame, sumac, chamomile, and rue) for same or different gynecological conditions (Table 2).

**Table 1.** Titles of gynecological conditions and preferred plants by authors.

	Soranus*	Paulus Aeginata**	Zahravi***	Şerefeddin Sabuncuoğlu
Hermaphroditism (70th Section)		None	None	None
Clitoridectomy (71st Section)		None	None	None
The treatment of the children with vaginal occlusion or atresia (72nd Section)		Fenugreek Rosin Turpentine pp 640	Acacia Dragon's blood Dry linen (linseed) Olibanum	Acacia Dragon's blood Date Olive oil
The treatment of the vaginal and vulval lesions (genital warts and pustules) (73rd Section)		Rose oil Illyrian iris Pomegranate Turpentine	Acacia Dragon's blood Olibanum Sumac Pomegranate rind Thyme Oak galls Barley flour Plantain Eglantine	Oak galls Barley flour Bramble Sumac Pomegranate rind
Extirpation of fibrous tissue in vagina (74th Section)		Birthwort Iris Mallow Rose oil	Green oil Liquorices Mallow Rose oil	Liquorices Mallow Rose oil Olive oil Birthwort
About abnormal delivery(75th Section)	Anise Cedar resin Dittany Olive oil Southernwood Sweetbay Wild cucumber	Fenugreek Mallow Linseed Camphor	Fenugreek Gum Marsh Mallow Myrrh Ptarmica (green oil) Sesame	Ferula Sesame Pomegranate Marshmallow Myrrh St John's wort
About the removal of the dead fetus (76th Section)			74th Fenugreek Marshmallow Linseed	74th
About the removal of the Fetus that died in the maternal uterus (77th Section)			None	None
About the removal of the placenta (78th Section)	Black cumin Cassia Celery Dittany Galbanum Illyrian iris Lilies oil Myrrh Rose Salvia Soap wort Spikenard Wormwood (Artemisia)	Cardamum Figs	Anise Artemisia Cassia Chamomile Marshmallow Pennyroyal Rue Sesame	Cassia Chamomile Figs Pennyroyal Rue Speedwell St John's wort
Common title	19	12	26	24

\*Sabuncuoğlu and Soranus wrote same two titles for gynecological situations.

\*\*Sabuncuoğlu and Paulus Aeginata wrote same five titles.

\*\*\*Sabuncuoğlu and Zahravi wrote same eight titles.

**Table 2.** Titles of gynecological conditions and the number of plants used by the authors.

	Soranus	Paulus Aeginata	Zahravi	Sabuncuoğlu	
The treatment of the children with vaginal occlusion or atresia (72nd Section),		3	4	4	*2
*Zahravi and Sabuncuoğlu similarly used Acacia, Dragon's blood.					
The treatment of the vaginal and vulval lesions (genital warts and pustules) (73rd Section)		4	10	5	*1 **3
*Paulus Aeginata, Zahravi, and Sabuncuoğlu similarly used Pomegranate.					
**Zahravi, Şerefeddin Sabuncuoğlu similarly used Oak galls, Sumac, and Barley.					
Extirpation of fibrous tissue in vagina (74th Section)		4	4	5	*2 **1 ***1
*Paulus Aeginata, Zahravi, and Şerefeddin Sabuncuoğlu; Mallow and Rose.					
**Paulus Aeginata, Sabuncuoğlu similarly used Birthwort.					
***Zahravi, Sabuncuoğlu similarly used Liquorices.					
About abnormal delivery (75th Section)	7	4	6	6	*1 **3
*Paulus Aeginata and Zahravi similarly used Fenugreek.					
**Zahravi and Şerefeddin Sabuncuoğlu similarly used Marshmallow, Myrrh, and Sesame.					
About the removal of the dead fetus (76th Section)	-	-	3	-	-
About the removal of the placenta (78th Section)	13	2	8	6	*1 **1 ***1 ****4

\*Paulus Aeginata and Sabuncuoğlu similarly used figs.

\*\*Soranus, Zahravi, and Sabuncuoğlu similarly used cassia.

\*\*\*Soranus and Zahravi similarly used Artemisia.

\*\*\*\*Zahravi, Şerefeddin Sabuncuoğlu similarly used cassia, chamomile, pennyroyal, and rue.

**Table 3.** Plants used for gynecological conditions in this study.

Common name	Local name	Name of the plant	Genus (Family)
Olive (oil)	Zeytin ağacı Akdeniz Zeytini Şifalı Zeytin	<i>Olea europaea</i> L.	Olea (Oleaceae)
Rose (oil)	Gül (Isparta gülü, yağ gülü, and fındık gülü)	<i>Rosa xdamascena</i> Herrm.	Rosa (Rosaceae)
Rue	Sedefotu	<i>Ruta chalepensis</i> L.	<i>Ruta</i> (Rutaceae)
Barley	Arpa	<i>Hordeum vulgare</i> L.	<i>Hordeum</i> (Poaceae)
Cucumber	Salatalık	<i>Cucumis sativus</i>	<i>Cucumis</i> (Cucurbitaceae)
Date Palm Tree	Hurma, Şeker Ağacı	<i>Phoenix dactylifera</i>	<i>Phoenix</i> (Arecaceae)
Fenugreek	Çemenotu Boyotu Buyotu Hulebe	<i>Trigonella foenum-graecum</i>	<i>Trigonella</i> (Leguminosae)
Camphor	Kafurun, kafur	<i>Cinnamomum camphora</i> (L.) J. Presl	<i>Cinnamomum</i> (Lauraceae)
Fig	İncir	<i>Ficus carica</i> L.	<i>Ficus</i> (Moraceae)
Linseed (linen) Linseed, Flax seed	Keten tohumu, zeyerek, bızıktan, zeylek, zerek	<i>Linum usitatissimum</i> L.	<i>Linum</i> (Linaceae)
Myrrh	Sarı Sakız, Mür, Mirra Mirrisafi Mürrüsafi Hakiki Mirra	<i>Commiphora myrrha</i> (Nees) Engl.	<i>Commiphora</i> (Burseraceae)
Pomegranate Rind	(Nar Kabuğu), Cülнар-I Mısıri	<i>Punica granatum</i> L.	<i>Punica</i> (Lythraceae)
Turpentin	Çam Terebentin Kızılçam	<i>Pinus brutia</i> Ten.	<i>Pinus</i> (Pinaceae)
İris	Nevruz Çiçeği	<i>Iris persica</i> L.	<i>Iris</i> (Iridaceae)
Anise	Anason (Büyük) Tekeotu Akanason	<i>Pimpinella anisum</i> L.	<i>Pimpinella</i> (Apiaceae)
Cassia	Çin Tarçını	<i>Cinnamomum cassia</i> (L.) J. Presl	<i>Cinnamomum</i> (Lauraceae)
Cumin	Kimyon Şifalı Kimyon	<i>Carum carvi</i> L.	<i>Carum</i> (Apiaceae)
Mugwort, Wormwood, Artemis	Pelin Acı Pelin Pelinotu Mideotu Ak Pelinotu	<i>Artemisia absinthium</i> L.	<i>Artemisia</i> (Compositae)
Pennyroyal	Yaban Fesleğeni Yarpuz Fesleğen Reyhan Füteneç	<i>Mentha pulegium</i> L.	<i>Mentha</i> (Lamiaceae)

(Continued)

**Table 3.** Plants used for gynecological conditions in this study. (Continued)

Common name	Local name	Name of the plant	Genus (Family)
Rosin weed	Reçine bitkisi	<i>Silphium integrifolium</i> Michx.	<i>Silphium</i> (Compositae)
Birthwort	Lohusa Otu Ziravend-î Tavilin	<i>Aristolochia clematitis</i> L.	<i>Aristolochia</i> (Aristolochiaceae)
Mallow	Ebegümeçi	<i>Malva sylvestris</i> L.	<i>Malva</i> (Malvaceae)
Liquorice (licorice) Root	Meyan Kökü	<i>Glycyrrhiza glabra</i> L.	<i>Glycyrrhiza</i> (Leguminosae)
Acacia	Akasya	<i>Acacia arabica</i> (Lam.) Willd.	<i>Acacia</i> (Leguminosae)
Dragon's Blood	Kardeş Kanı	<i>Daemonorops draco</i> (Willd.) Blume	<i>Daemonorops</i> (Arecaceae)
Olibanum (frankincense)	Günlük, buhur, tütsü	<i>Boswellia ameero</i> Balf. f.	<i>Boswellia</i> (Burseraceae)
Sumac	Sumak Sumak (Zehirli) Huzurotu Siyatikotu	<i>Toxicodendron pubescens</i> Mill.	<i>Toxicodendron</i> (Anacardiaceae)
Thyme	Kekik	<i>Thymus vulgaris</i> L.	<i>Thymus</i> (Lamiaceae)
Oak Galls	Mazi Meşesi	<i>Quercus infectoria</i> G. Olivier	<i>Quercus</i> (Fagaceae)
St. John's Wort	Sarı Kantaron Kılıçotu Binbirdelilikotu Mayasıl Otu Koyunkıran Yara Otu	<i>Hypericum perforatum</i> L.	<i>Hypericum</i> (Hypericaceae)
Plantain	Sinir otu, Damar Otu	<i>Plantago Major</i> L.	<i>Plantago</i> (Plantaginaceae)
Eglantine, Sweet Bier	Yaban Gülü (Kokulu)	<i>Rosa rubiginosa</i> L.	<i>Rosa</i> (Rosaceae)
Bramble (Blackberry)	Böğürtlen	<i>Rubus ulmifolius</i> Schott*	<i>Rubus</i> (Roseaceae)
Cedar Resin	Sedir Reçinesi	<i>Cedrus libani</i> A. Rich	<i>Cedrus</i> (Pinaceae)
Sweet Bay, Trunk Bark, Magnolia Bark	Manolya	<i>Magnolia virginiana</i> L.	<i>Magnolia</i> (Magnoliaceae)
Extract			
Dittany Winter Savory, Herb	Geyik Otu	<i>Satureja Montana</i> L.	<i>Satureja</i> (Lamiaceae)
Southernwood	Miskotu	<i>Artemisia abrotanum</i> L.	<i>Artemisia</i> (Compositae)
Ferula	Çakşır Cavşır (Oğlan Aşı)	<i>Ferula elaeochytris</i> corovin	<i>Ferula</i> (Apiaceae)
Marshmallow	Tıbbi Hatmi Hatmi İbiskökü Şifalılıkök Tibbikök Devegülü	<i>Althaea officinalis</i> L.	<i>Althaea</i> (Malvaceae)
Gum	Çadır Uşağı, Uşşak, Keleh El-Kanaveşak	<i>Dorema ammoniacum</i> D. Don	<i>Dorema</i> (Apiaceae)
Mastic (Gum)	Sakız Ağacı	<i>Pistacia lentiscus</i>	<i>Pistacia</i> (Anacardiaceae)
Ptarmica sneezewort, Yarrow (green oil)	Civanperçemi	<i>Achillea ptarmica</i> L.	<i>Achillea</i> (Compositae)
Sesame	Susam Sırık Sırlan Şırlagan Süsen	<i>Sesamum indicum</i> L.	<i>Sesamum</i> (Pedaliaceae)
Celery	Kereviz	<i>Apium graveolens</i> L.	<i>Apium</i> (Apiaceae)
Galbanum	Kasni otu Kasnısı	<i>Ferula szowitziana</i> DC.	<i>Ferula</i> (Apiaceae)
Lili	Ak Zambak (Misk zambağı)	<i>Lilium candidum</i>	<i>Lilium</i> (Liliaceae)
Salvia Sage Clary Sage Trilobed Sage	Yünlü Adaçayı	<i>Salvia aethiopsis</i> L.	<i>Salvia</i> (Labiatae)
Soap Wort	Sabunotu Çöğen Otu Çövenotu, Çoğanotu Üşnan, Tahdik Otu, Köpürgen, Kargasabunu	<i>Saponaria Officinalis</i>	<i>Saponaria</i> (Caryophyllaceae)
Spikenard	Hint Sümbülü	<i>Nardostachys Jatamansi</i> (D. Don) DC	<i>Nardostachys</i> (Caprifoliaceae)
Chamomile	Papatya	<i>Chamaemelum nobile</i> (L.) All.	<i>Chamaemelum</i> (Compositae)
Speedwell	Şih (Yavşan)	<i>Artemisia spicigera</i> K. Koch	<i>Artemisia</i> (Compositae)
Cardamom	Kakule Malabar Kahvesi	<i>Elettaria Cardamomum</i> (L.) Maton	<i>Elettaria</i> (Zingiberaceae)

Sabuncuoğlu wrote same 19 plants which typed by other authors for gynecological conditions in Cerrâhiyyetü'l-Hâniyye book. These plants are acacia, barley flour, birthwort, cassia, chamomile, dragon's blood, figs, liquorices, mallow, marshmallow, myrrh, olive oil, oak galls, pennyroyal, pomegranate rind, rose oil, rue, sesame, and sumac (Table 2). Sabuncuoğlu used different five plants (St

John's wort, date, bramble, ferula, and speedwell) similarly for medicinal purpose in Cerrâhiyyetü'l-Hâniyye (Table 2).

## Discussion

In the present study, plants used to treat the gynecological conditions in Sabuncuoğlu's



Cerrâhiyyetü'l-Hâniyye book were systematically determined. Sabuncuoğlu's book had an effect on physicians in Islamic medicine literature [11,18–20].

The work of Sabuncuoğlu contains detailed information about the treatment of women diseases and obstetrics. Sabuncuoğlu presented the medical applications without focusing on the underlying mechanism of disease and the results of treatments [3,5,11,13,15].

The treatment modalities in Cerrâhiyyetü'l-Hâniyye consists of three groups: dietetic, surgery, and pharmacology. Three groups of treatment, which also used for difficult delivery, were used to cure diseases of women. Sabuncuoğlu written difficult delivery and placenta retention sections under the same title like other authors such as Soranus, Paulus Aeginata, and Zahravi [10,11,14,16]. Sabuncuoğlu repeats the procedures of these physicians about the diagnosis and treatment of gynecological conditions [10,11,14,16]. However, there are differences between other books and Cerrâhiyyetü'l-Hâniyye in term of the names and numbers of plants used for obstetrics and gynecological conditions. Submitted difference in the present study was about prescriptions written by Sabuncuoğlu and the lack of occurrence of same plant names is remarkable for the history of medicine [10,11,14,16]. Half of the plants used for obstetrics and gynecological conditions in the Cerrâhiyyetü'l-Hâniyye were different from the other books compared. Physicians in the present study lived in different regions and different periods.

In accordance with the period which the physicians lived, it is obvious in the works that there exists a lack of knowledge among the physicians with regard to anatomy, microbiology, and pathology and it is obvious that the physicians were not able to evaluate the etiopathogenesis of the diseases [10,11,14,16]. Therefore, selection criterions of plants for a disease were different compared to nowadays. Gynecology and obstetrics conditions diagnosed according to symptoms and observations by the physicians without determining the relationship of reason-result [4,9]. The chosen treatment performed according to the experience of the physician.

In addition, the relationship between the “active ingredient” in the plant and the expected effect had not been known by physician of that period. Therefore, the plants were either used alone or in mixtures, without knowing the active ingredients. The treatments were not changed according to the response to the treatment [10,11,14,16]. Sabuncuoğlu recommended the necessity of

continuing to the treatment in the case of even if the disease was not cured. Nevertheless, Sabuncuoğlu used a considerable number of different plants for gynecological conditions. For that reason, it is difficult to reach a conclusion about the efficacy of the plants on the treatment of the diseases [10,11,14,16]. In the Sabuncuoğlu's Mücerebname work, it mentioned that he performed medical drug experiments [12]. Nevertheless, it was different from our current understanding of drug tests.

The historical period and its environment affected the attainability of the plant used to treat the illness. On the other hand, plants used by the physicians either grow in that area or it depends on the conduction of trade of the plants [4,13,15,21]. Anatolia is one of the richest regions on this subject.

Medical applications and recipes in the work of Sabuncuoğlu are same with the other works examined, but some of the plants used to prepare drugs are different. The difference that we detected could depend on the effect of the period that physician lived in or the environment that physician worked. One of the writers examined in the present study Soranus lived in the first century in Bergama and Alexandria city. Paulus Aeginata and Zahravi were the most important physicians in the sixth and ninth century, respectively. Paulus Aeginata lived in Aeginata, a city in Greece; Zahravi was a surgeon in Cordova, Spain; and Sabuncuoğlu had spent most of his life practicing medicine in Amasya and Bolu cities in Anatolia [10,11,14,16]. Therefore, physicians could have used the plants likening the appearance, shape, smell, or a property of the plant [4].

According to the modern modality of medicine, a relationship is established between the active ingredient used in drugs for the treatment of disease and the effect which the drug has [22,23]. Some of the plants used in the folk and traditional medicine continued to be used in Anatolia [5,20,24]. Experimental studies to uncover the benefits of this kind of plants are available [23,25,26].

## Conclusion

Plants used as treatments for conditions related to gynecology and obstetrics in Cerrâhiyyetü'l-Hâniyye book have some differences from the other works compared. One of classic medicine representative Sabuncuoğlu who lived in 15th century in Anatolia did not copy the use of plant methods of preceding physicians but instead used his knowledge and experiences according to his conditions. Differences and similarities in the use of the plants we determined

in our study may contribute to the existing knowledge of medical history. In addition, botanists, geographers, and archeologists could examine these findings from their aspects and comparison of more works in a similar way will strengthen the result of our study.

## References

- [1] Uzel İ. Tool use and disease treatment in ancient medicine bladder and gynecological instruments. Publication of Turkish Historical Society, Ankara, Turkey, 2000.
- [2] Tyler EV. Herbal medicine: from the past to the future. *Public Health Nutr* 2000; 3(4A):447-52.
- [3] Cappaso L. 5300 years ago, the Ice Man used natural laxatives and antibiotics. *Lancet* 1998; 352(9143):1864.
- [4] Baytop T. Therapy with medicinal plants in Turkey (past and present). 2nd edition, Nobel Medicine Publication, İstanbul, Turkey, 1999.
- [5] Uzel İ. Emergence of medicine in Anatolia. Ancient Science Institute Publication, İstanbul, Turkey, 2008.
- [6] Pomeroy SB. Women's history and ancient history. The University of North Carolina Press, Chapel Hill, NC, 1991.
- [7] Kadioğlu S, Ogenler O, Uzel İ. Şerefeddin Sabuncuoğlu's drawings of gynecobstetric instruments. *Turk J Med Sci* 2011; 41(1):1-5.
- [8] Ögenler O, Un İ, Uzel İ. Comparison of treatments of obstetrics and gynecology in ancient and medieval age in Anatolia. *Türkiye Klinikleri J Med Ethics* 2012; 20(3):163-9.
- [9] Şar S, Süveren K. Valuation of the theriac formulations in the mucerebname from the view of the pharmacy. *Türkiye Klinikleri J Med Ethics* 2006; 14(3):145-9.
- [10] Temkin O. Soranus' gynecology. Johns Hopkins Press, Baltimore, MD, 1991.
- [11] Uzel İ. Cerrâhiyyetü'l-Hâniyye. 2nd edition, Publication of Supreme Council for Culture, Language and History, Ankara, Turkey, 1992.
- [12] Uzel İ, Süveren K. Mücerreb-nâme. Atatürk Culture Society Publication, Ankara, Turkey, 1999.
- [13] O'Dowd MJ. The history of medications for women matria medica woman. Informa Healthcare, New York, NY, 2001.
- [14] Spink MS, Lewis GL. *Albucasis on surgery and instruments*. 1st edition, Universty Press, London, UK, 1973.
- [15] Pioreschi P. *History of medicine volume II greek medicine*. Edwin Mellen Press, New York, NY, 1991.
- [16] Adams F. *The seven books of Paulus Aegineta*. Printed for The Sydenham Society, London, UK, 1844.
- [17] Süveren K. İbni Sina (980-1037)'nin Akkrabaddin Eseri ile Şerefeddin Sabuncuoğlu (1385-1468)'nun Akkrabaddin Adlı Eserinin Tıp ve Bilim Tarihi Açısından Karşılaştırılması. PhD Thesis, Ankara University, Ankara, Turkey, 1991.
- [18] Kafali H, Aksoy Ş, Atmaca F, San İ, Sabuncuoğlu S. Colored illustrations of obstetrics manipulations and instrumentation techniques of a Turkish surgeon Serafeddin Sabuncuoğlu in the 15th century. *Eur J Obstet Gynecol Reprod Biol* 2003; 105:197-202.
- [19] Er U, Pamir N. Ottoman surgical treatises and their influences on modern neurosurgery in Turkey. *World Neurosurg* 2013; 80:165-9; doi:10.1016/j.wneu.2013.01.005
- [20] Solaroglu İ, Acar F, Bavbek M, Ture U, Beskonakli E. The history of neurosurgery in Anatolia and Turkey: the Turkish Neurosurgical Society. *World Neurosurg* 2013; 79:16-24.
- [21] Nagamia H. Islamic medicine, history and current practice. *JISHM* 2003; 2:19-30.
- [22] Lulmann H, Mohr K, Ziegler A, Bieger D. *Color atlas of pharmacology*. 2nd edition, Thieme Stuttgart, New York, NY, 1999.
- [23] Brunton L, Chabner B, Knollman B. *Goodman and Gilman's the pharmacological basis of therapeutics*. 12th edition, Mc Graw Hill, New York, NY, 2011.
- [24] Yesilada E. *Healing herbs*. Hayykitap, İstanbul, Turkey, 2012.
- [25] Shaw D. Risks or remedies? Safety aspects of herbal remedies in the UK. *J R Soc Med* 1998; 91(6):294-6.
- [26] Attah AF, OBrien M, Koehbach J, Sonibare MA, Moody JO, Smith TJ, et al. Uterine contractility of plants used to facilitate childbirth in Nigerian ethnomedicine. *J Ethnopharmacol* 2012; 143:377-82.