

## INTERDEPENDENCE OF SKIN AND UTERUS IN PERSIAN MEDICINE

### MEĐUSOBNA OVISNOST KOŽE I MATERNICE U PERZIJSKOJ MEDICINI

Maryam Taghavi Shirazi\*, Fatemeh Eghbalian\*\*, Soodabeh Bioos\*\*\*,  
Somaye Mahroozade\*\*\*\*

#### SUMMARY

*Persian Medicine, which flourished in the Islamic Golden Age (9th to 12th century AD), considers the human body a unified whole whose organs are in constant interaction and equilibrium with each other. The skin is one of these interdependent organs that play an important role in protecting internal organs, and as an excretion route, it can expel substances that are not consumed by the body. Alternatively, the uterus, a vital organ in pregnancy, excretes excess body material during menstruation to maintain a woman's health. This narrative study discussed the importance of aligning the structure and function of these two organs based on the main textbooks of Persian Medicine, especially those written during this historical period. Likewise, electronic databases were used for investigating related articles.*

*The skin and uterus are two excretory organs. When the secretion of excess material through menstruation is physiologically or pathologically impaired, the body transfers these substances to the skin as the organ associated with the uterus. Thus, the clinical manifestations of*

\* Department of Persian Medicine, School of Persian Medicine, Iran University of Medical Sciences, Tehran, Iran. ORCID: <https://orcid.org/0000-0003-1190-0541>

\*\* Department of Persian Medicine, School of Persian Medicine, Iran University of Medical Sciences, Tehran, Iran. ORCID: <https://orcid.org/0000-0002-4668-3025>

\*\*\* Department of Persian Medicine, School of Persian Medicine, Iran University of Medical Sciences, Tehran, Iran. ORCID: <https://orcid.org/0000-0003-4076-0525>

\*\*\*\* Department of Persian Medicine, School of Persian Medicine, Iran University of Medical Sciences, Tehran, Iran. ORCID: <https://orcid.org/0000-0002-8217-9280>

Correspondence Address: Somaye Mahroozade, Department of Persian Medicine, School of Persian Medicine, Iran, University of Medical Sciences, Vahdat Eslami ST, Tehran, Iran, Postal Code: 1114733311. E-mail: [dr.mahroozade@gmail.com](mailto:dr.mahroozade@gmail.com).

some skin diseases can be a sign of imbalance in the function of the uterus and its related organs. Consequently, the structural and functional similarities of both organs can provide a new guide in the approach to their participatory diseases in the integration of Persian and conventional medicine.

**Keywords:** History of medicine, uterus, skin, traditional medicine, Iran

## INTRODUCTION

During the Islamic Golden Age (9th to 12th centuries AD), medicine flourished through the practice of Persian physicians, *Tabari*, *Rhazes*, *Haly Abbas*, *Akhawayni*, *Zahrawi*, *Masihi*, *Avicenna*, and *Jorjani* had great contributions to the flourishing of medical science (Abdolahadi et al., 2019; Nimrouzi, Daneshfard & Parvizi, 2020; Taghavi-Shirazi et al., 2020). Relying on their clinical insights and experiences documented in their valuable manuscripts (Table 1), they had a thorough knowledge of the anatomy and function of organs, including two important organs, the skin, and the uterus, and offered analytical and sometimes innovative ideas in this regard (Bioos et al., 2015; Fadaei & Khadem, 2017).

Persian Medicine, as holistic medicine, believes in the immense complexity of the whole body and its various organs (Pasalar, 2021). From this perspective, the skin, as a large sense and protective organ, may excrete waste from the internal organs. Therefore, the presentation of skin diseases such as inflammatory lesions and discoloration in many cases may be a sign of dysfunction of other organs (Ibn Sina, 2005; Iranzadasl et al., 2022; Jorjani, 2005; Majusi Ahvazi, 2008; Masihi; Shirbeigi & Ranjbar, 2016).

Table 1. Persian medicine scholars in the Islamic Golden Age

	Persian name	English or Latin name	Books
1	<i>Abubakr Muhammad ibn Zakariyya al-Razi</i>	Rhazes 865-925 AD	<i>Al-Mansouri fi al-Tibb</i> (Liber al-Mansuori)
2	<i>Abu al-Hassan Ali ibn Rabban Tabari</i>	Tabari 916-986 AD	<i>Ferdaws al-Hekmah fi al-Tebb</i> (Paradise of Wisdom in Medicine)
3	<i>Ali ibn Abbas Majusi Ahvazi</i>	Haly Abbas 930-994 AD	<i>Kāmil al-Sinaā al Tibbiya</i> (The Royal Book)
4	<i>Abu Bakr Rabi ibn Ahmad Akhawayni Bukhari</i>	Akhawayni ? –983 AD	<i>Hidayat al-Muta allimin fi al-Tibb</i> (The Students' Handbook of Medicine)

5	<i>Abu al-Qasim Al-Zahrawi</i>	Zahrawi 936–1013 AD	<i>The Kitab al-Tasrif</i> (The Method of Medicine)
6	<i>Abu Sahl Masihi</i>	Masihi Died circa 1010 AD	<i>Al-Mia fil-Tibb</i> (Book of the Hundred)
			<i>Tashri Badan al-Ensan</i> (Human Body Description)
7	<i>Ibn Sina</i>	Avicenna 980-1032 AD	<i>Al-Qanun fi al-Tebb</i> (The Canon of Medicine)
8	<i>Ismaeil Jorjani</i>	Jorjani 1136 – 1040AD	<i>Zakhireye Kharazm Shahi</i> (Treasure of the Khwarazm Shah)
			<i>Al- Aghraz al- Tebbie va al- Mabahas al-Alayieh</i> (Medical Pursuits)

Given the coincidence or intensification of some skin lesions during menstruation, pregnancy, and some related disorders, especially polycystic ovary syndrome (PCOS) (Housman & Reynolds, 2014; Natale et al., 2016; Raghunath, Venables & Millington, 2015), this article investigates the anatomical and functional associations between the two critical organs, skin and uterus, from the perspective of Persian medicine scholars and conventional medicine. It is hoped that finding these basic links will help provide a new guide to approach their related illnesses.

## METHODS

This narrative review incorporated specialized books and articles on the anatomy and function of the skin and uterus and their dependencies. First, the valid and prime sources of Persian medicine, especially from the 9th to 12th century AD in Arabic or Persian languages, using general keywords such as uterus, skin, pores, menstruation, *Zahdan* (uterus), *Jeld* (Skin), *Mas-sam* (pores), *Tams*, and *Heyz* (menstruation), were examined. They included *Al-Mansouri fi al-Tibb*, *Ferdaws al-Hekmah fi al-Tebb*, *Kāmil al-Sinaā al Tibbiya*, *Hidayat al-Muta allimin fi al-Tibb*, *The Kitab al-Tasrif*, *Al-Mia fil-Tibb*, *Tashri Badan al-Ensan*, *Al-Qanun fi al-Tebb*, *Zakhireye Kharazm Shahi* and *Al- Aghraz al- Tebbie va al- Mabahas al-Alayieh*. Furthermore, some recent Persian medicine manuscripts such as *Kholase al-hekmah* (12th century), *Tashrih al- abdan* (14th century), and *Kholasat al-Tajarob* (15th century) were reviewed. Reference medical books and articles related to the research topic such as uterus, skin,

anatomy, menstruation, menstrual cycle and skin, and polycystic ovary syndrome and dermatology were also collected from databases and reputable search engines such as PubMed, GoogleScholar, ScienceDirect, SID, and Scopus. The dates of publications included in the results were from 2000 to 2020. Also, Studies published in languages different from English and Persian were excluded. Subsequently, the structural and functional similarities of these two important organs and their relations in some diseases from the point of Persian and conventional medicine views were examined and compared to suggest a more comprehensive diagnostic perspective in this field.

## RESULTS AND DISCUSSION

The great Persian medicine scholars described the body's organs delicately centuries ago when the current medical tools and equipment and radiographic and diagnostic methods were not available. Way back in the 12th century AD, *Ismaeil Jorjani*, one of the famous physicians during the Islamic golden age in the medieval era, reminded us that the physician must first know the anatomy of a given organ, its function, and its relationship with other organs to understand patients' symptoms and realize what happens inside the body (Bioos et al., 2015; Jorjani, 2012).

Consequently, knowledge of organ formation and its links with others is a basic principle for finding effective methods for diagnosing and managing diseases. Accordingly, this study described the structure and function of the skin and uterus and elaborated on their interconnection as two excretory organs with many commonalities in the emergence of diseases.

### Anatomy and function of the skin

In Persian medicine, the skin is known to protect and cover the internal organs of the body (Ibn Sina, 2005; Jorjani, 2005; Majusi Ahvazi, 2008; Masihi). *Ibn Sina* (Avicenna), one of the most influential and prominent scientists in the medieval period (980-1032 AD) was very familiar with the anatomy and interrelationships of organs in the body. In his valuable encyclopedia in medicine, *The Canon of Medicine*, he discussed the anatomy of the skin and believed that sensory-motor nerves originating in the brain or spinal cord disperse into thin fibers and eventually terminate in the skin (Ibn Sina, 2005; Shabaninezhad et al., 2020).

*Haly Abbas*, in the 10th century, considered that the sensation of the skin is stronger than all other organs because of the multiplicity of nerves.

As such, many late Persian medicine physicians have described the skin as a “nervous” organ, that is, a nerve-like organ in white and with enough softness to expand, stretch, and contract. In this view, the nerve is a soft but strong organ that conveys the force of sensation and movement to the organs of the body (Aghili Khorasani, 2006; Arzani, 2012).

Similar to the case of the nerves, *Jorjani* (1136-1040AD) mentioned the skin acts as a terminal for blood vessels where the arteries nourish the skin. Moreover, he believed that the cutaneous vessels and subcutaneous muscles cause the skin to gain heat and warmth (Jorjani, 2005).

In this view, the skin is created to dump the waste products of other organs (Majusi Ahvazi, 2008). There are pores in the skin called *Masam* from which wastes are excreted. Hair and sweat also come out of these skin pores (Jorjani, 2005; Majusi Ahvazi, 2008; Moradi et al., 2017).

Accordingly, in Persian medicine, the skin plays a significant role in several ways: protection of internal organs of the body from external pests; substantial sensation and a place of reception and accumulation of body wastes with many pores that excrete the excess substances.

Today, it is recognized in modern anatomy that the skin is the largest organ in the body, consisting of three layers: the epidermis, the dermis, and the hypodermis. The epidermis is the body’s first defense barrier. Blood vessels, nerve fibers and terminals, hair follicles, and sebaceous and sweat glands are located in the dermis. The presence of many skin receptors in the skin makes it a sensitive organ to the external environment. The third layer of the skin, or hypodermis, is rich in fat cells and is conducive to maintaining body temperature. Moreover, the elasticity is high in this section (Dinulos, 2020; Fadaei & Khadem, 2017; Mescher, 2018).

From an embryological perspective, the outermost germ layer or ectoderm gives rise to organs that are in contact with the external environment, including the peripheral and central nervous system, the skin, hair, and nails. The body’s protective tissues, such as the muscles and the dermis of the skin, originate from the mesoderm layer (Sadler, 2018).

#### Anatomy and function of the uterus

In Persian medicine, the uterus is an organ located between the bladder and the rectum (Al-Zahrawi, 2004; Ibn Sina, 2005; Jorjani, 2012; Masihi, 2008b). In the 9th century, *Rhazes*, an outstanding Persian physician, in *Al-Mansouri fi al-Tibb*, a short general medieval medical textbook widely read

in the west, explained that similar to the bladder, the uterus has nerve-like elastic tissue and can expand and contract during pregnancy (Rhazes, 2008; Zarrintan, Shahnaee & Aslanabadi, 2018). After him, Persian medicine scholars such as *Avicenna* and *Jorjani* believed his description (Al-Zahrawi, 2004; Ibn Sina, 2005; Jorjani, 2012; Masihi, 2008b). The uterus has longitudinal and oblique fibers. Its oblique fibers have important roles during gestation (Akha-wayni, 1992; Majusi Ahvazi, 2008).

The uterus benefits substantially from the arteries and veins, as well as nerves. When a female reaches puberty, the arteries of the uterus fill with blood. If she does not become pregnant, the blood stays in the uterus and is excreted by the body, which is the menstrual blood (Torabiarani, Bioos, Tansaz et al., 2014). Menstrual balance maintains a woman's health in terms of quantity and quality (Ibn Sina, 2005).

*Avicenna* believed that the uterus has pores that should open during the flow of menstruation blood. Therefore, in women whose uterus pores are narrowed, the blood cannot circulate well and causes infertility (Ibn Sina, 2005; Mahroozade et al., 2021; Moradi et al., 2017).

*Mansur ibn Elyas*, a late 14th-century Persian physician, in his book *Mansur's anatomy* (*Tashrih-i Badan-i Insan*), illustrated multiple parts of the body, even the uterus with the fetus by colored figures (Zarshenas et al., 2016) (see cover figure).

Conventional medicine considers that the uterus plays a significant role in pregnancy, implantation, fetal conservation, and childbirth. It is known as a fibrous, muscular organ whose smooth muscles are located longitudinally and transversely. Sympathetic and parasympathetic nerves innervate the uterus. So, the body of the uterus is sensitive to stretching and dilation. It also has three layers. The structure of the inner layer of which, namely, the endometrium, changes under the influence of sex hormones. If pregnancy does not occur, the endometrial cells are destroyed and released as menstrual blood during blood vessel contraction and lack of blood supply at that layer. Embryologically, the urogenital system originates from the middle part of the mesoderm (Ameer et al., 2020; Bioos et al., 2015; Gasner & Aatsha, 2020; Sadler, 2018).

Importance of excretory pathways of wastes in the body

According to Persian medicine manuscripts, when food enters the body, it transforms to be usable. The majority parts of the food are consumed by

the body's organs, and the remainders are eliminated as waste products (Ibn Sina, 2005; Jorjani, 2012).

In the Royal Book, Holy abbas described that these substances are excreted in the form of feces, urine, sweat, nasal and lung secretions, menstrual blood, and secretions from sensory pores such as the ears and nose, or they may be excreted imperceptibly from the skin. In case these wastes are not normally eliminated from the body, it will cause some problems (Majusi Ahvazi, 2008).

On the other hand, the scholars of Persian medicine have ranked the organs of the body according to their significance. In this classification, the heart, brain, liver, stomach, and uterus are considered more important and have superior roles than the skin. Therefore, when the main excretory pathways of the body are disrupted, or waste substances are produced in large quantities, the body directs them to a non-core organ such as the skin to protect the more critical organs (Ibn Sina, 2005; Kordafshari et al., 2017; Majusi Ahvazi, 2008; Nazem I, 2010; Shirbeigi & Ranjbar, 2016). The incidence of skin manifestations of diseases such as inflammation of the intestine, irritable bowel syndrome, and liver diseases can confirm the importance of the skin in controlling waste products from other parts of the body (Hazin, Abuzetun & Zein, 2009; Passeron & Piche, 2020; Suh, Lee & Na, 2019).

Considering the histological and anatomical structure, the uterus and skin have functions that are relatively similar in specific respects. Numerous studies have been carried out on cutaneous manifestations, including inflammatory skin lesions such as acne, urticaria, and pigmentation disorders associated with menstruation, pregnancy, sexual hormonal disorders, and cystic ovary syndrome (Kasperska-Zajac & Zamlynski, 2012; Misitzis, Cunha & Kroumpouzos, 2019; Natale et al., 2016; Raghunath et al., 2015).

Raghunath et al. in 2015 demonstrated that cyclical fluctuations in estrogen and/or progesterone that define menstruation might reduce immune and barrier functions in the skin. Therefore, some dermatosis, including acne, psoriasis, atopic eczema, and irritant dermatitis, is exacerbated premenstrually or during pregnancy and while using oral contraceptives (Raghunath et al., 2015).

Housman et al., in a comprehensive study about polycystic ovary syndrome (PCOS), a common endocrine disorder among women, demonstrated the key position of dermatologists in evaluating and treating the skin man-

ifestations of this syndrome like hirsutism, acne, acanthosis nigricans, and alopecia (Buzney et al., 2014; Housman & Reynolds, 2014).

In 2012, two Polish researchers reported a 19-year-old girl who suffered from chronic urticaria concomitant with functional ovarian cysts and irregular menstrual cycles. After a short time of treatment with sex hormones, her menstruation was regulated and the symptoms of urticaria withdrew (Kasperska-Zajac & Zamlynski, 2012).

Similarly, *Baha al-Dawla Razi*, one of the most famous physicians of the 15th century, in *Kholasat al-Tajarob* wrote about a woman who had amenorrhea for one year accompanied by urticaria. After using some herbal remedies for restarting the menstruation, urticaria lesions were also cured (Razi, 2003).

Accordingly, a study in the views of Persian medicine scholars of nearly 10 centuries ago is very valuable in expressing the similarity and relationship between the uterus and skin, which can provide a new approach to the skin and uterus participatory disorders of these two organs. The interdependence of skin and uterus is as follow:

- **Similarities in anatomy:**

Both organs have elastic, soft, nerve-like tissues that can stretch or contract. Also, they have special pores. Through these pores, excretory materials such as sweat are released out of the skin and menstrual blood out of the uterus.

- **Similarities in histology and embryology:**

Part of the skin, or epidermis, originates from the embryonic layer of the ectoderm, which forms the peripheral and central nerves. The dermis, which is a collection of nerves, veins, and collagenous tissue, has given rise from the mesoderm germ layer.

The uterus and other parts of the genitals, kidneys, and urinary tract, similar to the dermis, are of mesoderm origin. Therefore, the peripheral nerves that have extended in both the skin and the uterus, as the *nervous* organs, have a common embryonic and histological origin. As such, both organs are comparable in many ways, such as uterine expansion during pregnancy and increasing waist circumference in abdominal obesity.

- **Similarities in function:**

These two organs have a similar function in disposing of waste or excess substances in the body. In the skin, waste products from the whole body are



excreted through the skin pores. In the womb, surplus material from the body is eliminated during menses by its pores.

A summary of uterine and skin similarities is given in Table 2.

Table 2. The similarity of skin and uterus in anatomy and function.

	Skin	Uterine
<b>Anatomy</b>	Sensitive, flexible, and replete with sensory-motor nerves	A <i>nervous</i> organ with elasticity
	With pores to excrete waste products	With pores for menstrual bleeding
<b>Embryology</b>	Mesodermal origin of the dermis	Mesodermal origin of the genitourinary system
<b>Function</b>	Collecting and repelling body waste	Waste repellent via menstruation

## CONCLUSIONS

From the perspective of Persian medicine, the skin is created as an excretory organ so that the other parts of the body can direct their wastes and extra substances to be removed from the skin pores. In this view, the uterus is another vital organ that contributes to the equilibrium of the body through menstruation during the reproductive activity of the woman. Whenever menstrual blood flow is disrupted due to physiological or pathological reasons, the body can consider the skin as an alternative pathway to excrete these substances from the outlet pores of the skin. The accumulation of these substances in the skin may cause various manifestations such as discoloration, skin rashes, or pigmented lesions.

As a unified whole, the organs of the human body are always interdependent. Skin and uterus have impacts on each other because of structural and functional similarities. As a result, a multidisciplinary approach that includes Persian and conventional medicine for the skin and uterus participatory disorders is suggested. However, more clinical and experimental efforts could be spent on Persian medicine research to achieve better clinical outcomes.

## ACKNOWLEDGMENTS

The authors would like to thank all those who have helped us prepare this manuscript.

## REFERENCES

1. Abdolahadi, A., Mahroozade, S., Jafari-Dehkordi, E., et al. (2019). The Paternal Cause of Abortion from the Viewpoint of Avicenna. *Traditional and Integrative Medicine*, 162-164.
2. Aghili Khorasani, M. (2006). *Kholase al-hekmah*. Qom: Esmailian.
3. Akhawayni, R. (1992). *Hedayat al-Motaallem in fi Tebb*. Mashhad: University of Mashhad.
4. Al-Zahrawi. (2004). The Kitab al-Tasrif. In: *Kuwait Foundation for the Advancement of Sciences*.
5. Ameer, M. A., Fagan, S. E., Sosa-Stanley, J. N., et al. (2021, August 11). Anatomy, Abdomen and Pelvis, Uterus. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK470297/>
6. Bioos, S., Nekoolaltak, M., Tansaz, M., et al. (2015). The anatomy of the female internal genitalia in Iranian traditional medicine and comparison with modern medicine findings. *Medical History Journal*, 7(23), 69-97.
7. Dinulos, J. G. H. (2020). *Habif's Clinical Dermatology*. Elsevier.
8. Fadaei, F. & Khadem, E. (2017). A review on the structure and function of the skin in Iranian traditional medicine point of view and comparison with conventional medicine. *Journal of Dermatology and Cosmetic*, 8(1), 48-56.
9. Gasner, P. A. A. (2021, May 9). *Physiology, Uterus*. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK557575/>
10. Hazin, R., Abuzetun, J. & Zein, N. (2009). Recognizing and treating cutaneous signs of liver disease. *Cleve Clin J Med*, 76, 599-606. <https://doi.org/10.3949/ccjm.76a.08113>
11. Ibn Sina, H. (2005). *Al-Qanun Fi al-Tibb (The Canon of Medicine)*. Beirut: Dar ehya alterase al arabi.
12. Jorjani, E. (2005). *Al-Aghraz al-Tibba val Mabahess al-Alaiaa*. Tehran: Tehran University Press.
13. Jorjani, E. (2012). *Zakhireye Kharazmshahi*. Qom: Ehya-e Teb-e Tabiee Institute.
14. Kasperska-Zajac, A., & Zmlynski, J. (2012). Chronic urticaria and irregular menstrual cycle: A case report of effective therapy with oral contraception. *J Dermatolog Treat*, 23(2), 159-160. <https://doi.org/0954646634.2010.499933/10.3109>
15. Kordafshari, G., Kenari, H. M., Nazem, E., et al. (2017). The role of nature (tabiat) in Persian medicine. *Traditional and Integrative Medicine*, 177-181.
16. Mahroozade, S., Mohammadi Kenari, H., Eghbalian, F., et al. (2021). Avicenna's Points of View in Epidemics: Some Advice on Coronavirus 2(COVID-19). *Complement Med Res*, 28(2), 175-176. 000509398/10.1159
17. Majusi Ahvazi, A. (2008). *Kamil al Sinaat al-Tibbiyya*. Tehran: Jalaaluddin.
18. Masihi, A. (2008a). *Kitab al-Mia fil-Tibb*. Tehran: Iran University of Medical Sciences, Research Institute for Islamic and Complementary Medicine.

19. Masihi, A. (2008b). *Tashri Badan al-Ensan*. Tehran: Iran University of Medical Sciences, Research Institute for Islamic and Complementary Medicine.
20. Mescher, A. (2018). *Junqueira's Basic Histology: Text and Atlas*. McGraw-Hill Education.
21. Misitzis, A., Cunha, P.R. & Kroumpouzos, G. (2019). Skin disease related to metabolic syndrome in women. *Int J Womens Dermatol*, 5(4), 205-212. 10.1016/j.ijwd.2019.06.030
22. Moradi, F., Alizadeh, F., Naghizadeh, A. et al. (2017). The Concept of "Masam" (Pores) in Persian Medicine. *Trad Integr Med.*, 2(4), 160-165.
23. Natale, C. A., Duperrret, E. K., Zhang, J. et al. (2016). Sex steroids regulate skin pigmentation through nonclassical membrane-bound receptors. *Elife*, 5, e15104. <https://doi.org/10.7554/elife.15104>
24. Nazem I. (2010). *Nature in Persian Medicine*. Tehran: Abej.
25. Passeron, T. & Piche, T. (2020). Skin manifestations associated with irritable bowel syndrome. *J Eur Acad Dermatol Venereol*, 34(10), e651-e652. <https://doi.org/10.1111/jdv.16514>
26. Raghunath, R., Venables, Z. & Millington, G. (2015). The menstrual cycle and the skin. *Clin Exp Dermatol*, 40(2), 111-115. <https://doi.org/10.1111/ced.12588>
27. Rhazes. (2008). *Al-Mansouri fi al-Tibb (M. Zaker, Trans.)*. Iran, Tehran: Tehran University of medical sciences.
28. Sadler, T. W. (2018). *Langman's Medical Embryology*. Wolters Kluwer Health.
29. Shirbeigi, L. & Ranjbar, M. (2016). The effect of life style on healthy skin from the viewpoint of Traditional Persian Medicine (TPM) comparing to modern medicine. *Jiitm*, 7(2), 165-171.
30. Suh, H. Y., Lee, W. J. & Na, S. Y. (2019). Dermatologic Manifestations in Inflammatory Bowel Disease. *Korean J Gastroenterol*, 73(5), 285-293. <https://doi.org/10.4166/kjg.2019.73.5.285>
31. Taghavi-Shirazi, M., Ghods, R., Hashem-Dabaghian, F. et al. (2020). Abu-Sahl al-Masihi (died circa 1010 AD): The Persian physician in the early medieval era. *J Med Biogr*, 28(3), 132-135. <https://doi.org/0967772017720372/10.1177>
32. Torabiarani, M., Bioos, S., Tansaz, M., et al. (2014). Uterine complications of amenorrhea and oligomenorrhea in Iranian traditional medicine. *Med History*, 4(12), 125-138.

## SAŽETAK

*Perzijska medicina, koja je procvjetala u zlatnom dobu islama (od 9. do 12. stoljeća), smatra ljudsko tijelo jedinstvenom cjelinom čiji su organi u stalnoj interakciji i ravnoteži jedni s drugima. Koža je jedan od tih međusobno ovisnih organa koji imaju važnu ulogu u zaštiti unutarnjih organa te kao sustav za izlučivanje može izlučivati tvari koje tijelu nisu potrebne. Alternativno, maternica, vitalni organ u trudnoći, izlučuje višak tjelesnog materijala tijekom menstruacije kako bi održala zdravlje žene. Ova narativna studija govori o važnosti usklađivanja strukture i funkcije tih dvaju organa na temelju važnih udžbenika perzijske medicine, posebno onih napisanih tijekom ovoga povijesnog razdoblja. Jednako tako, elektroničke baze podataka korištene su za istraživanje članaka.*

*Koža i maternica dva su organa za izlučivanje. Kada je izlučivanje viška tvari menstruacijom fiziološki ili patološki poremećeno, tijelo te tvari prenosi na kožu kao organ koji je*

*povezan s maternicom. Dakle, kliničke manifestacije nekih kožnih bolesti mogu biti znak neravnoteže u funkciji maternice i srodnih organa. Posljedično, strukturne i funkcionalne sličnosti obaju organa mogu pružiti nov pogled u pristupu njihovim participativnim bolestima, uz integraciju perzijske i konvencionalne medicine.*

**Ključne riječi:** *povijest medicine, maternica, koža, tradicionalna medicina, Iran*