

Human–Architecture–Environment Interaction Based on Seasonal Displacement in Traditional Medicine (Case Study: Housing in Iran’s Hot and Dry Climate)

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Abstract

Human beings have always sought ways to preserve their health through a preventive approach. One of the means of addressing health and preventing various diseases is to ensure it through environmental health and the effective relationship between residential and natural environments. Part of the climatic strategies for organizing life and creating healthy living environments has been documented in medical texts from the Islamic period. Classical physicians regarded the preservation of human health as the primary goal of medicine and considered it dependent on the interaction and adaptation of human beings to the climatic environment, based on the structural correspondence between human temperament and the four elements of nature. The aim of this study is to examine the background of traditional climatic knowledge concerning the interaction between human beings and the natural and built environment, using a historical-interpretive method and drawing upon traditional medical texts. The findings indicate that the medical foundations of climatic design based on seasonal displacement refer to such features as site selection, temporal regulation, vertical stratification, and spatial orientation. In this context, seasonal displacement, as a form of climatic lifestyle and climatic therapy, as well as intra-house seasonal displacement as an appropriate climatic strategy, can also be applied to help maintain health in contemporary houses.

Keywords: Residential architecture, Traditional medicine, Seasonal displacement, Temporal regulation, Site selection.

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Introduction

Architecture is a vast field of knowledge that maintains a close relationship with many other sciences, and this interconnection has enriched it further. One of the important sciences with which past architects appear to have been familiar is medicine. Historical evidence and surviving buildings from previous eras indicate that traditional architects were aware of the relationship between medicine and architecture and took this connection into account in the design and construction of buildings.

As a major branch of the natural sciences, medicine has had a significant influence on lifestyles, residential customs, and the organization of domestic spaces with the aim of preserving health and providing

treatment. Despite this historical connection, interdisciplinary studies on the relationship between medicine and architecture in the Islamic period have not received sufficient and appropriate attention from researchers.

The Bundahishn, which is regarded as one of the Zoroastrian texts, shows that Iran played an important role in the formation of the theory of the microcosm. According to this theory, nature (the cosmos) and the human being, as the microcosm, possess a single essence due to their common origin.^{1 2}

In ancient natural philosophy, both nature and the human being are composed of the four elements: fire (with a hot and dry temperament), air (with a hot and

moist temperament), water (with a cold and moist temperament), and earth (with a cold and dry temperament). Furthermore, the human being possesses four simple temperaments (hot, cold, dry, and moist) as well as combined temperaments (hot and dry, hot and moist, cold and dry, and cold and moist).³

The correspondence between human temperaments and the elements of nature constitutes an essential part of the theoretical foundations of traditional medicine concerning the interaction between human beings and their environment.⁴

Therefore, the types of balance can be described as follows:

- Balance within the human body: the equilibrium among the internal components of the body.
- Balance between the inner and outer body: the equilibrium between the components of the human body and external (pathogenic) factors.
- Environmental balance: the equilibrium among the elements of the surrounding environment, including material factors (such as air, water, and soil), human factors (such as society), and other influences.

A climatic way of life and the organization of residential environments based on the geographical characteristics and climatic variations of places were considered among the most important measures recommended by physicians to maintain the balance of human temperament, preserve health, and promote climatic therapy. From this perspective, human health depends on the dynamic interaction and adaptation of human beings to changing climatic conditions through altering lifestyle and place of residence (migration), as well as the provision of physical settings in architecture that enable such changes.

Since the house is the place where a major part of daily life occurs and where people spend a significant portion of their time, this article examines the interaction between human beings and residential architecture as a built environment, focusing on the pattern of intra-house seasonal displacement in traditional medicine.

This study seeks to answer the following questions:

- What is the climatic scientific origin of the spatial organization of traditional residential environments?
- How have the ideas of Iranian-Islamic scholars influenced the formation of Iranian housing?
- How can the organized and practical knowledge, as well as the rich concepts found in traditional Iranian medical texts, be applied to address the needs of contemporary housing?

Theoretical Foundations

The term *climatotherapy* or *climatic treatment* refers to a process in which a patient relocates from an unsuitable climate to one that is compatible with their temperament

in order to improve their health condition. This therapeutic approach has ancient roots in Hippocratic medicine.⁵

According to this view, if the rhythm of human life is aligned with climatic variations and with the structure of the built environment designed in response to these changes, a dynamic balance is created among these three elements, leading to sustained health. However, if any of these factors undergoes change, humans and the built environment must gradually adapt to new conditions or create the capacity for transformation in order to establish a new equilibrium. In other words, just as humans must adapt themselves to nature in order to maintain health, the built environment should also provide conditions that help regulate and balance human temperament. Nevertheless, such adaptation does not always imply complete conformity with the climate; at times, restoring balance in the body may require actions that counter prevailing climatic conditions.

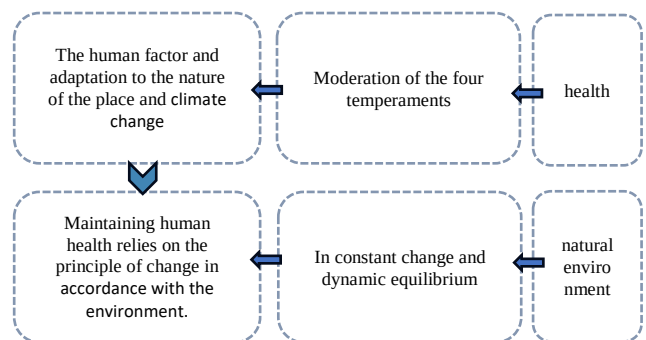


Figure 1. Your safety is the definition of Sunni medicine

The objective of this systemic perspective in traditional medicine is to preserve health through the gradual establishment of balance among components and through a hierarchical alignment between architecture, human nature, and the nature of the world. In the past, adapting lifestyle to climate occurred in various ways, including seasonal dietary modifications, changes in clothing, activities, and even relocation at regional, urban, and domestic scales. A distinctive feature of this method was its gradual process, synchronized with the natural rhythm of habitation and climatic change.

Accordingly, medical teachings on health preservation and treatment emphasized a hierarchy of interventions: first correcting lifestyle, then prioritizing diet therapy over simple drugs, and giving precedence to simple remedies over compound medications.⁶ Moreover, alongside gradual lifestyle adjustments, physicians stressed selecting appropriate clothing, nutrition, location, and housing according to an individual's temperament in different seasons. In cases of illness, similar patterns of lifestyle modification or climatotherapy were employed to

restore humoral balance and health. These gradual measures allowed the human body—considered the greatest physician—to heal itself.⁶

Al-Razi writes in this regard: “Do not accustom nature (the body) to seek a remedy for every illness, for this will cause it to become unable to cure its own diseases without the assistance of a physician.”⁶

Seasonal migration, which from Ibn Khaldun’s perspective represents a complete adaptation to the environment.⁷

Medical texts adopted a preventive and health-oriented approach to maintaining well-being and to climatic treatment. According to Balkhi, “Anyone who cares about the well-being of the body must choose the best possible dwelling, which, although difficult, is necessary. Therefore, every wise and discerning person should strive to improve the air and the conditions of their living environment.”⁷

Accordingly, two main approaches are proposed in medical literature for dealing with unhealthy environments:

1. Seasonal relocation or moving from an unhealthy environment to a healthier one.
2. Employing various measures, methods, and techniques for improvement and modification.

For example, if one uses water that does not possess a favorable temperament, it should be treated through methods that improve and correct its quality. Likewise, if the air of a place is unsuitable, one should choose a region with a better climate. Just as distant regions differ from one another, similar variations also exist within limited areas and small localities; climatic differences may occur within a single city, just as they are observed between distant countries.⁷

This statement contains a profound reference to the importance of utilizing climatic variations—at both macro and micro scales—to achieve optimal environmental conditions, which constitutes the very objective of seasonal relocation.

Accordingly, physicians and scholars of traditional medicine maintain that relocating from one town to another with a more suitable and compatible climate is not feasible for everyone and is often difficult. Therefore, whenever possible, relocation—seasonal migration—should be undertaken: from one place to another, from one neighborhood to another, from a village to a town, from a town to a city, and from one region to another, particularly to areas unaffected by epidemics. Such movement is considered among the best preventive measures. However, if relocation is not possible, efforts should be directed toward managing and improving the existing environment.⁸ Among such measures was

transferring the patient from one place to another; for example, moving from the lower floor of a house to the upper floor, from a southern veranda to a northern one, or from the center of the city to its outskirts, where the air was clearer.⁹ Likewise, relocation from one dwelling to another, and from one season to another, was recommended, since differences in residences and seasons necessarily entail differences in air and climate.⁸ Abu Zayd al-Balkhi was among the earliest thinkers to discuss, in detail, the issue of human spatial relocation from the perspective of health and climatotherapy. He believed that one of the valuable customs of people in his time was the careful selection of dwellings and the periodic change of residence. This practice not only brought joy and vitality but also helped preserve physical health by enabling individuals to choose environments compatible with their condition. In his view, changing location and benefiting from fresh air constituted an effective method for both the prevention and treatment of illnesses. Particularly during periods of widespread disease, climatotherapy—through relocation to places with cooler and cleaner air—could help prevent illness and increase resilience against extreme heat.¹⁰

Thābit ibn Qurra also advised that individuals whose physical strength had diminished during the summer should sleep in well-ventilated places, drink cool water, and consume refreshing fruits.¹⁰ Additionally, Razi emphasized in his works that in hot weather, **seeking shelter in underground spaces** and **drinking cold water** can help prevent illness. He recommended that individuals with a **dry temperament** reside in **humid and pleasant climatic locations**.⁶ Furthermore, he emphasized the importance of selecting **cool and humid locations for acute patients**, believing that being in such environments helps to **reduce fever, strengthen innate heat, and bring calmness to the pulse and respiration**.⁶ Razi and Jurjani also emphasized that for the treatment of chronic diseases, **relocating the patient to a city with a climate opposite to that of the illness** can aid in the recovery process.^{6 12} Abu Sahl Masihi also considered relocating from an unsuitable house to a suitable one as effective in improving physical health. He believed that a **moderate (balanced) house** contributes to **longevity, increased fertility, better growth of plants, and enhancement of mental abilities**.¹³

Based on these perspectives, the medical texts of the Islamic era emphasized the role of climate in the **location of cities** and the **organization of residential spaces**. In these teachings, **clean and moderate air** was considered the primary factor for maintaining health and preventing diseases.

Additionally, **light** held a special place in architecture and residential design as an effective element for cleansing and softening the air.⁶

Among the most important climatic considerations in the design of residential environments emphasized in Islamic medical texts is the **attention to the orientation of cities and buildings** to benefit from favorable winds and ensure proper ventilation. Physicians of this period pointed to the significance of geographical directions and explained the combined effects of wind, temperature, and humidity in selecting the appropriate orientation for buildings. Utilizing diverse directions in architectural design enables inhabitants with different temperaments to benefit from favorable climatic conditions.

In Islamic medical texts, geographical directions and various winds play a fundamental role in the spatial organization of residential environments and the moderation of climatic conditions. Hippocrates, in his analysis of city orientations, considered the **eastern direction** more suitable for health than the northern direction due to its balanced climate.¹⁴

He also describes the **western direction** as harmful to health due to the intense heat of sunlight and the warm winds coming from that direction.¹⁴

Razi also considered the **eastern direction** suitable for dwellings, while he regarded the **southern direction** as harmful to the body due to its excessive heat and humidity.⁶

In response to unfavorable climatic conditions, Jurjani recommends that house roofs be built high, with large vents, and that living spaces open toward the east. Additionally, **northern passages** (corridors) should be incorporated within the houses to ensure the flow of favorable air circulation.^{15 16}

Abu Sahl Masihi, in his book *Al-Mi'ah fi al-Tibb* (The Hundred in Medicine), extensively discusses the impact of geographical features such as mountains, seas, and wind directions on the health of inhabitants. According to him, a house must be located in a desirable spot that is harmonious with the surrounding environment.

He considers a house oriented to the **north**, with windows open toward the northern wind and other directions closed, as the **best option for health**. Following that ranking come houses with **eastern**, **western**, and, finally, **southern** orientations in terms of health benefits.

Moreover, he emphasizes that buildings should be designed to receive the **maximum sunlight**, as sunlight softens the air trapped in interior spaces. He also highlights the importance of **high ceilings**, **large**

windows, and **avoiding opening doors and windows toward the southern and western winds**.¹³

Komal al-Din Tiflisi, in his examination of the air quality of cities, highlighted the role of the four winds and their effects on the body. He believed that cities with openness toward the east and enclosure from the west have the best climatic conditions. This perspective underscores the importance of the **direction of prevailing winds** in improving the quality of the living environment.¹⁷

Climatic observations found in Islamic medical texts emphasize the **vital role of air (wind)** as the most important factor in climatic health—except in extremely cold regions—and stress the **superiority of eastern and northern directions** in the spatial organization of residential environments.

The preference for these directions is related to the **natural characteristics of prevailing winds** in terms of their **quality, temperature, and humidity levels**. Rahawi and Abu Sahl Masihi described the winds as follows:

- **Northern winds:** cold and dry
- **Southern winds:** warm and humid
- **Eastern winds (Şabā):** warm and dry tending toward temperate
- **Western winds (Dabūr):** cold and humid.¹³

The beneficial effects of **favorable air** in health and climatotherapy have had significant influence on the **organization of residential environments and the lifestyle of their inhabitants**. In many Islamic countries, including Iran, climatic living was associated with **daily or seasonal movement between open, semi-open, and enclosed spaces**. Enclosed spaces were generally used during **unfavorable climatic conditions or for private activities**.

This pattern not only responded to **physical needs**, but also contributed to **mental and psychological well-being**. Such a social way of living prioritized **collective life over individual life**, and directly affected the **spatial organization of residential environments**. In this approach, the principal spaces of the house were **not designed with fixed functions**; rather, their use changed according to **time, season, and the temperament of the inhabitants**.

Abu Zayd al-Balkhi, in his writings, refers to the **gradual movement of residents between different spaces of the house**. He recommends that buildings include **various types of spaces**: an area close to the outdoor air, a **semi-open space**, and another located **farther from direct exposure to the outside air**. This gradual transition—similar to the movement of a person through different stages of a **bathhouse**—has positive

effects on bodily health. The design of **basements and underground spaces (sardābs)** should also be adapted to **natural conditions and seasonal changes**.¹⁰

In Iranian architecture, evidence indicates that the **orientation of residential buildings and the spatial organization of houses** were influenced by climatic conditions, particularly the **prevailing winds**. Many cities and dwellings in desert regions were designed and organized according to the **direction of the wind**.¹⁸ In the humid northern and southern regions of Iran, the modification of climatic conditions through **ventilation and air circulation** has also played an important role in shaping residential environments. The term “**Rūn**” in Iranian architecture referred to the **orientation of buildings**, and it generally included three main types: **Rāsteh** (northeast–southwest), **Esfahani** (northwest–southeast), and **Kermani** (east–west).

Although this classification cannot be universally generalized to all of Iranian architecture, it nevertheless reflects the attention given to **prevailing winds and climatic conditions** in the orientation and design of buildings.¹⁹

Overall, air quality, together with temperature and humidity, constituted the primary basis for the climatic design of residential environments in order to ensure thermal comfort, temperamental balance, and the preservation of inhabitants’ health.

Diagram 2 shows the different orientations of Iranian residential buildings.

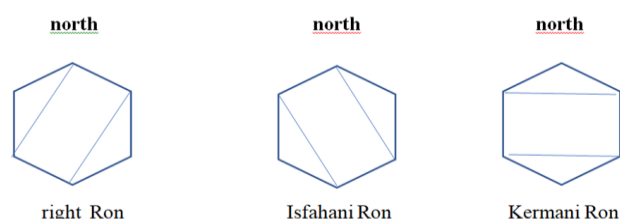


Figure 2: Introducing the urban runes of Iran.²⁰

Table 1. Patterns of Iranian city and architecture orientation^{20 21}

Features	Ron's name
Most of the central cities of Iran Close to the direction of the Qiblah and the most important direction for attracting eastern and northern winds	right
The dominant pattern in areas such as Isfahan, Persepolis, and Istakhr Tends to attract western and northern winds	Isfahani
The dominant pattern in regions such as Kerman, Hamedan, and West Azerbaijan Resistance to black storms, cold winds, and extreme cold Wanting to fully absorb the east wind	Kermani

Masih ibn Hakam reports that **Hippocrates** emphasized that anyone who wishes to preserve the health of the body and its faculties should have **four separate rooms in the house, each designated for a different season**.

In **winter**, it is preferable to reside in a room with a **rear door**, as this space does not block the **southern wind**, which is warm and dry and helps reduce excess bodily moisture.

For **spring**, residence in a room with a **western door** is recommended, since it allows the **Dabūr (western wind)**—described as cold and moist—to pass through, which is believed to improve the quality of the blood.

In **summer**, the **inner room** exposed to the **northern wind** is considered most suitable, because this wind helps reduce **bile (ṣafrā)**.

In **autumn**, living in a room with an **eastern door** is suggested, as the **Ṣabā (eastern wind)**—warm and moist—assists in the reduction of **black bile (sawdā)**. Furthermore, the presence of **gardens and running water within the house** is believed to strengthen the spirit, improve eyesight, and enhance the freshness and brightness of the complexion.²²

Abu Zayd al-Balkhi also emphasizes the necessity of having separate residential spaces for each season within the house. He explains that these spaces should be designed in such a way that inhabitants can relocate to an appropriate area when needed and benefit from the favorable winds of that particular season.

On hot summer days, sitting or sleeping in the direction of the **northern wind** is recommended. In winter, it is preferable to sit in a place exposed to the **southern wind**. During spring and autumn, positioning oneself in the path of the **eastern wind (Ṣabā)** is considered desirable, as it produces a cool and pleasant breeze. Ordinary people, too, are aware of this principle and recognize that sleeping in the morning breeze and sunlight during these two seasons contributes to improved health.

However, exposure to the **western wind (Dabūr)** should be avoided, as it is regarded as harmful to the body.¹⁰

In addition, **Abu Zayd al-Balkhi** suggests that residential spaces should be designed at a level higher than the ground surface in order to remain protected from heavy and humid air currents. During periods of extreme heat or cold, it is preferable for people to sit or rest on elevated platforms or beds. These principles apply not only to private houses but also to larger settlements in different regions of the earth.¹⁰

Relocation (Seasonal Displacement) from the summer residence to the winter residence must be

arranged in accordance with the requirements of nature, with greater protection against the cold of autumn than that of spring.

It is maintained that a winter residence should possess six essential characteristics:

1. It must be sheltered and protected from direct exposure to winds and air currents.
2. Its walls should be thick and solid, preventing cold from penetrating through openings and pores.
3. The house should be spacious, with high ceilings, allowing sufficient volume for the circulation and displacement of vapors and exhalations.
4. It should receive adequate daylight and illumination, as much as possible.
5. These same principles—wall thickness, spatial breadth, elevated ceilings, and sufficient light—should also be considered in the design of summer residences.
6. The air within winter houses should be warmed by appropriate fuel so that heat is distributed evenly throughout the entire space. Heat that exceeds the state of moderation—whether through excessive indoor temperature or close proximity to the heat source—is considered detrimental to health.

Houses with numerous doors and exposed to various winds tend to be excessively cold in winter and overly hot in summer.

Dwellings constructed as corridor-like spaces in basements exhibit conditions opposite to those located at higher elevations: such subterranean houses are warm in winter and cool in summer.

The reason lies in the differing internal condition of the earth during these two seasons—a matter explained within the domain of natural philosophy.^{9 23}

Al-Balkhi states that during periods of extreme heat or cold, it is necessary to seek refuge inside rooms, chambers, houses, and subterranean spaces in order to remain protected from their harmful effects. However, he emphasizes that going to basements, cellars, and sunken spaces is not always beneficial, since the air in such places is heavy and humid, which can weaken the body and cause harm.

He argues that only at midday—during the peak heat of noon, and not before or after—does retreating to these spaces become preferable to remaining exposed to intense heat. In such cases, it is better to reside at a level significantly elevated above the ground, on platforms or beds installed for this purpose, so that air can be received from above through an opening created at the upper part of the space.

This type of measure for relieving the discomfort of heat has long been common and customary among the general population, and practice has traditionally followed this pattern (10).

In the following section, the effects of winds from different geographical directions on the human body are discussed.

Northern Wind:

The northern wind strengthens the body, prevents the excessive flow of surface fluids, constricts the fine pores of the skin, and reinforces digestive power. It also purifies corrupted air that may lead to the emergence of contagious diseases.²³

Southern Wind:

The southern wind weakens and enfeebles the body's strength, causes the pores of the skin to open more widely, mobilizes bodily humors and drives them outward, and dulls the senses. This wind also tends to corrupt and worsen wounds and injuries, intensify illnesses, and lead to headaches, drowsiness, and infectious fevers.²³

According to Razi (Rhazes):

The southern wind can provoke headaches, corneal inflammation (keratitis), epileptic seizures, and infectious fevers, particularly if it blows during summer and late spring.⁶

Eastern Wind:

If the eastern wind blows at the end of the night, it possesses greater delicacy and gentleness. However, if it begins to blow early in the morning, its dryness is stronger than that of the air which, through the sun's warmth and radiation, has become refined, soft, and light, with reduced moisture. When this wind blows at the beginning of the night, it contains more humidity, since it has not yet been warmed by the sun's rays and therefore has not lost its natural moisture.²³

Western Wind (Maghrib Wind):

If the western wind blows at the beginning of the day, since it has not yet been affected by the sun's heat, it is considered a dense and heavy wind. However, if this wind blows toward the end of the day and before the onset of night, it becomes lighter and milder due to the influence of the sun's warmth on it.⁵

Table 2. The effect of winds on the balance of people's temperament in different seasons

The effect of wind on mood	Characteristic of the wind	The right direction of the wind	dominant mood	season
Reason for the goodness of blood	Cold and wet wind	west wind	moderate	spring
Decreased bile	Cold and dry wind	north wind	bile	summer
Decreased soda	hot and humid	east wind	soda	autumn
Decreased phlegm	hot and dry	south wind	phlegm	winter

Subsequently, the characteristics of climatic strategies were examined based on their frequency in the views of researchers and are illustrated in Figure 3. According to the diagram, the indicators “openings of houses oriented toward the north and east” and “the direction of seasonal winds—northern winds for summer residences, eastern winds in autumn, southern winds in winter, and western winds for spring residences”—in relation to housing design and orientation, as well as “relocating from one place to another and moving to an

environment opposite to the nature of the illness during sickness”—in relation to recommended therapeutic measures—show the highest frequency among the collected data.

Additionally, “houses with four residential domains suitable for different seasons” and “designing houses in which sunlight can reach all parts of the dwelling” are also among the practical and significant indicators in architectural design, as emphasized by a larger number of researchers.

**Figure 3.** The frequency of indicators of climate measures for housing and seasonal movement according to researchers

Research Method

To identify a climatic model for desirable housing based on seasonal displacement, this study relies not on direct citation of medical texts, but rather on the shared perspectives of scholars in architecture and traditional medicine who have conducted research on the relationship between residential architecture and human health. Since architectural design is a broad field encompassing aspects ranging from the physical characteristics of buildings to the principles of visual perception, research within its sub disciplines is conducted through diverse approaches across different academic fields.

Data were collected through library research, including books and articles published in reputable journals in the fields of traditional medicine and architecture. Keywords such as climatic strategies, housing and residential complexes, seasonal displacement, traditional medicine, and temperamental balance were used to identify sources that directly address the subject. In this context, and considering the research background and data collection method, the views of prominent scholars such as Avicenna (Ibn Sina), Ali ibn al Abbas al Majusi, Abu Zayd al Balkhi, Nazari, al Razi, Abu Sahl al Masihi, and others were examined.

For data analysis, a historical interpretive method—also referred to as hermeneutic or interpretative analysis—was employed. This method is based on the assumption that social phenomena and human actions are inherently meaningful and derive their significance from their social context. The primary aim of this analytical approach is to reveal and explain the underlying meanings embedded within texts or events related to the research topic. Two key elements are considered in this method: the text or event under study and its context. The term “text” refers to written or spoken research materials, whereas “context” denotes the circumstances and conditions in which the text or event occurs. Through reference to context, interpretive analysis seeks to understand the meaning of the text and move beyond the surface of observable reality toward the deeper and internal content of texts and events.

Following this historical interpretive analysis, criteria for healthy housing and the organization of interior residential spaces—based on a climatic lifestyle grounded in seasonal displacement—are derived. This framework is presented as the “internal seasonal displacement pattern in housing within the hot and dry climate of Iran,” and the process through which it was identified is illustrated in the following diagram.

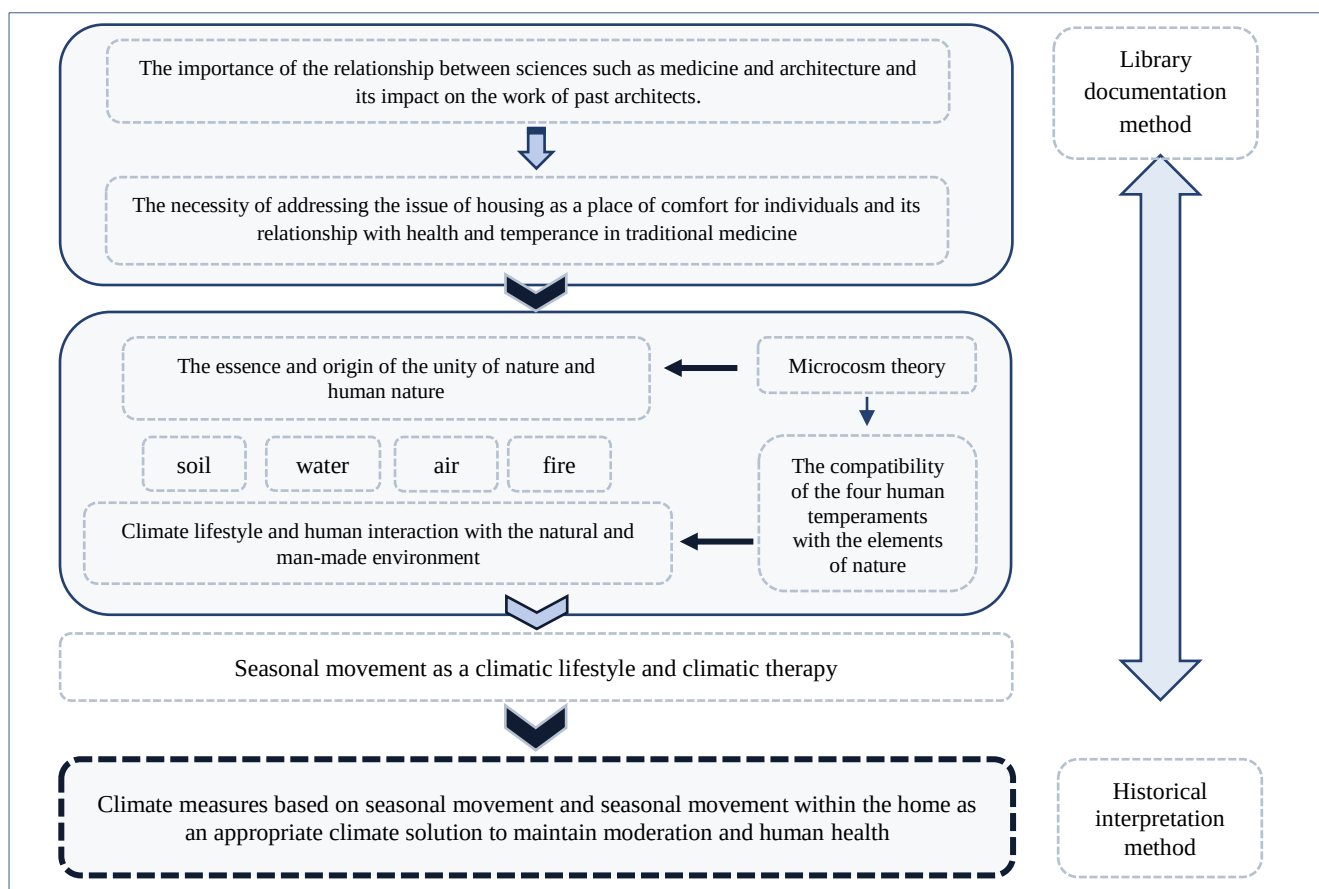


Figure 4. Research path based on the library method in the data collection stage and the historical interpretation method in the data analysis and judgment stage

Discussion

The Iranian house is a direct manifestation of spiritual and cultural values, as well as the prevailing way of life.²⁴

The closest approach to an anthropological examination of house architecture and the relationship between lifestyle and the spatial organization of the house belongs to Pirnia.²⁴

A review of the studies by Karim Pirnia, Arthur Upham Pope, Nader Ardalan, Christian Bromberger, as well as the accounts of Ja'far Shahri, Naser Najmi, and Abdollah Mostowfi, identifies seven characteristics for the Iranian house. Among these features are the simultaneous presence of three types of spaces—open, enclosed, and semi-covered—and the flexibility of space in response to the dynamic nature of lifestyle, human behavior, and daily activities, as well as the absence of strict functional specialization for spaces.

Haeri, in his classification of the factors influencing the formation of historical houses, considers

three domains to be fundamental: the territorial domain (land and environment), the domain of life (lifestyle), and the semantic domain (meanings and cultural expressions).²⁴

At the architectural scale, if we aim to describe the spatial organization of the Iranian house as a spatial network, we may consider two perpendicular axes. The horizontal axis represents the sequence of spatial layers extending from the entrance to the courtyard, while the vertical axis defines the layers ranging from the floor to the roof. Anthropological studies have shown that the naming of these spatial layers reflects the presence of an invisible structural network.

Along the horizontal axis, the layers closest to the courtyard are referred to as *jalow-sara* (front zone), and along the vertical axis, as *paeen-khaneh* (lower level). At the farthest layer of the horizontal axis lies the *aqab-sara* (rear zone), while on the vertical axis, the roof is designated as the highest spatial layer.²⁴

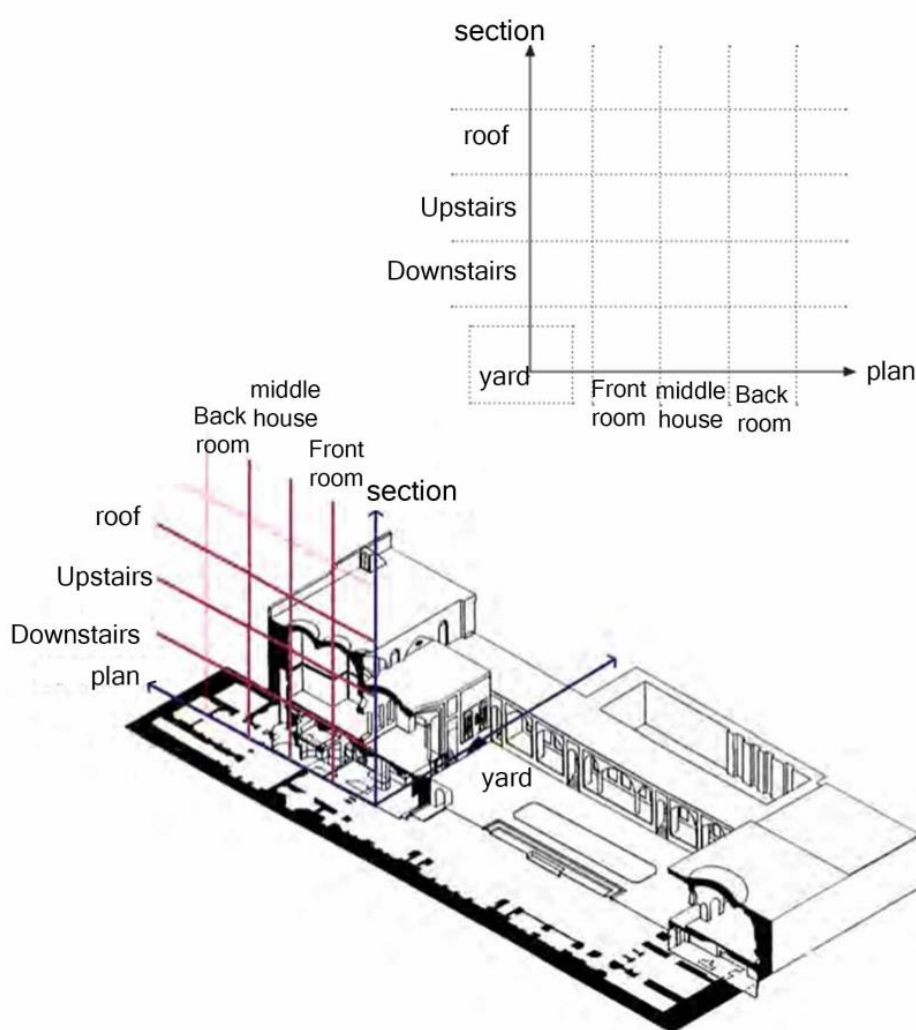


Image 1. Display of the two axes of heaven and earth in the invisible network and its deployment on the spatial organization.²⁴

The therapeutic measures of traditional medicine in domestic architecture are grounded in achieving balance in the qualities of air and protecting inhabitants from unhealthy air. The methods for attaining this balance vary across different climates and seasons. Accordingly, the equilibrium of air qualities is addressed within three general domains: climatic design, seasonal design, and protection from unhealthy air.

A climatic lifestyle based on seasonal displacement was one of the physicians' principal teachings and strategies for harmonizing human life with the climate and the natural characteristics of place, with particular emphasis on the significance of air as a climatic element influencing human health. This approach had important consequences for organizing patterns of living, determining the location of residence, and structuring both the overall and detailed arrangement of residential environments in order to regulate thermal conditions. The traditional patterns of this interaction are examined below.

According to Pourdeyhi, attention to the arrangement of spaces based on seasonal displacement has existed since ancient times in traditional houses. He explains that the lifestyle in courtyard-centered houses was founded on two essential principles: first, ensuring security and privacy for family living spaces, whereby the central courtyard functioned not only as an open space but also as an integral part of daily life; and second, seasonal displacement, according to which the placement of enclosed spaces around the courtyard was organized in alignment with their periods of use throughout the year.²⁵ Elizabeth Beazley and Michael Harverson consider the architecture of traditional houses in the hot

and dry desert regions of Iran as an attempt to cope with harsh climatic conditions. They classify seasonal migration in winter and summer on the basis of sun-seeking and sun-avoiding strategies. Accordingly, during cold seasons, relocating living spaces from the northern side to the southern side of the house is considered sufficient.

However, they describe different conditions for summer due to the extreme heat and dryness of the air. In this case, they propose that, in addition to horizontal relocation, vertical displacement is also necessary. They also emphasize the effectiveness of windcatchers (badgirs) and the presence of a pool beneath them for cooling the air. Furthermore, they provide detailed descriptions regarding their height, the organization of variables, the orientation of upper openings, and the placement of interior vents to ensure the proper functioning of windcatchers.²⁴

Memarian considers the significance of this spatial settlement system—shaped by a climatic lifestyle based on seasonal displacement—to be so fundamental that he identifies two historically institutionalized patterns in terms of internal seasonal movement and the division of spaces into winter and summer quarters, referred to as the “seasonal pattern” or the “internal seasonal displacement pattern”:

- Internal winter–summer seasonal displacement within a single façade.
- Internal winter–summer seasonal displacement across two opposing façades.¹⁹

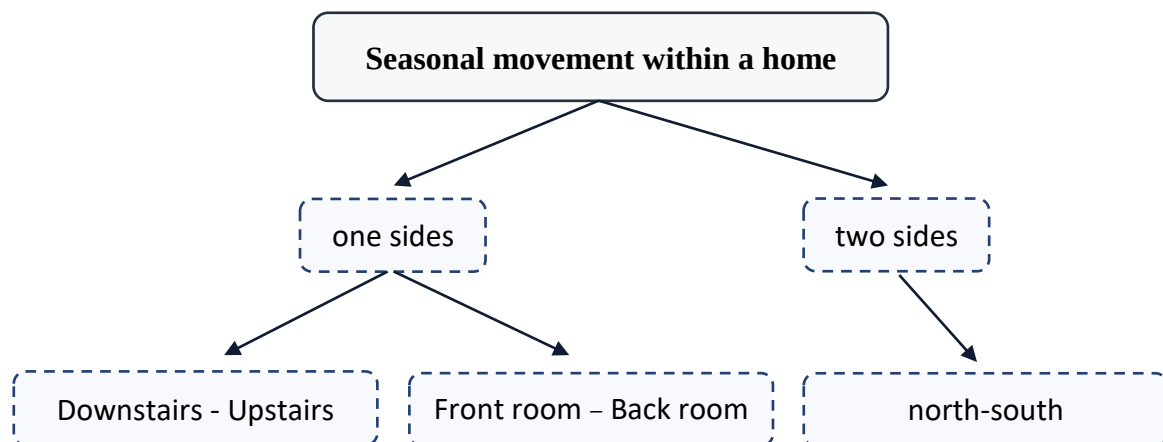


Figure 5. Architectural solutions for indoor seasonal movement.

In this context, considering the pattern of internal seasonal displacement and the recommendation of four residential zones suitable for different seasons, the

characteristics of spatial elements and details of health-promoting housing (in each season) are briefly examined based on the analysis of researchers' theories.

Table 3. Health-promoting characteristics of seasonal spaces and the moderating effect of the seasonal cycle

Physician/Architect	Health-giving and regulating properties of the seasonal cycle	Seasonal spaces
Savjoi, Balkhi Shahri, Baghdadi Razi	Remedies for cold and humidity: 1- Orienting in the direction of the warm wind 2- Closing the outer opening and the smallest inner opening 3- Living in warm places such as sloping ground and kilns and near a heat source 4- Conducting and distributing heat evenly 5- Diverting the hot air outlet 6- Dense walls 7- Lighting 8- Soft and warm carpeting 9- Width and height of the space to remove steam from heating and lighting devices 10- Closing the openings 11- Moisture insulation 12- Burning warm-tempered plants	Winter settlement
Savoji, Balkhi Shahri, Baghdadi Jilani, Razi	Remedies for heat and dryness: 1- Orienting in the direction of the cold and moist wind 2- Installing an opening towards the cool wind 3- Moving to a cool part of the house, such as a damp cellar, basement, or pond when the weather is dry 4- Dense walls and high ceilings to face the hot wind 5- Placing a high bed on the floor 6- Installing a windbreaker and fan while adjusting the wind speed 7- Cold and moist plants and water to improve the air around the house 8- Fragrantizing the water	Summer settlement
Savoji, Vitruvius	Remedies for drought: 1- Planting warm-tempered flowers such as maryland, narcissus, and nightshade. 2- Living in a low, sloping place that receives the west and east winds. 3- Burning fragrant incense such as oud, labdanum, and frankincense in gatherings.	Autumn settlement
Savage, Vitruvius	1- Staying in the direction of the moderate and gentle wind to benefit from a good breeze 2- Using eastern light	Spring settlement

Considering the above points and the conducted examinations, it can be observed that most historical houses in the hot and dry climate of Iran contain two main domains: summer and winter quarters. Given the importance of adapting contemporary housing to present human needs, the following section examines the spatial characteristics of residential architecture based on the pattern of seasonal displacement within the house.

In general, houses can be categorized according to function and level of accessibility into public, semi-private, and private domains. Public domains include spaces such as the reception area, guest room,

entrance, verandas (iwans), and sanitary facilities. The reception space is typically designed with direct natural lighting and, whenever possible, maintains a direct connection with the courtyard or balcony.

In traditional houses, the division between summer and winter domains is arranged so that guests are received in the space opposite to the current season, since these areas are used less frequently than the family's private living spaces. Spatial relationships within the public domain should therefore be organized in a way that the entrance of guests into the house does not disturb or compromise the privacy of the family.

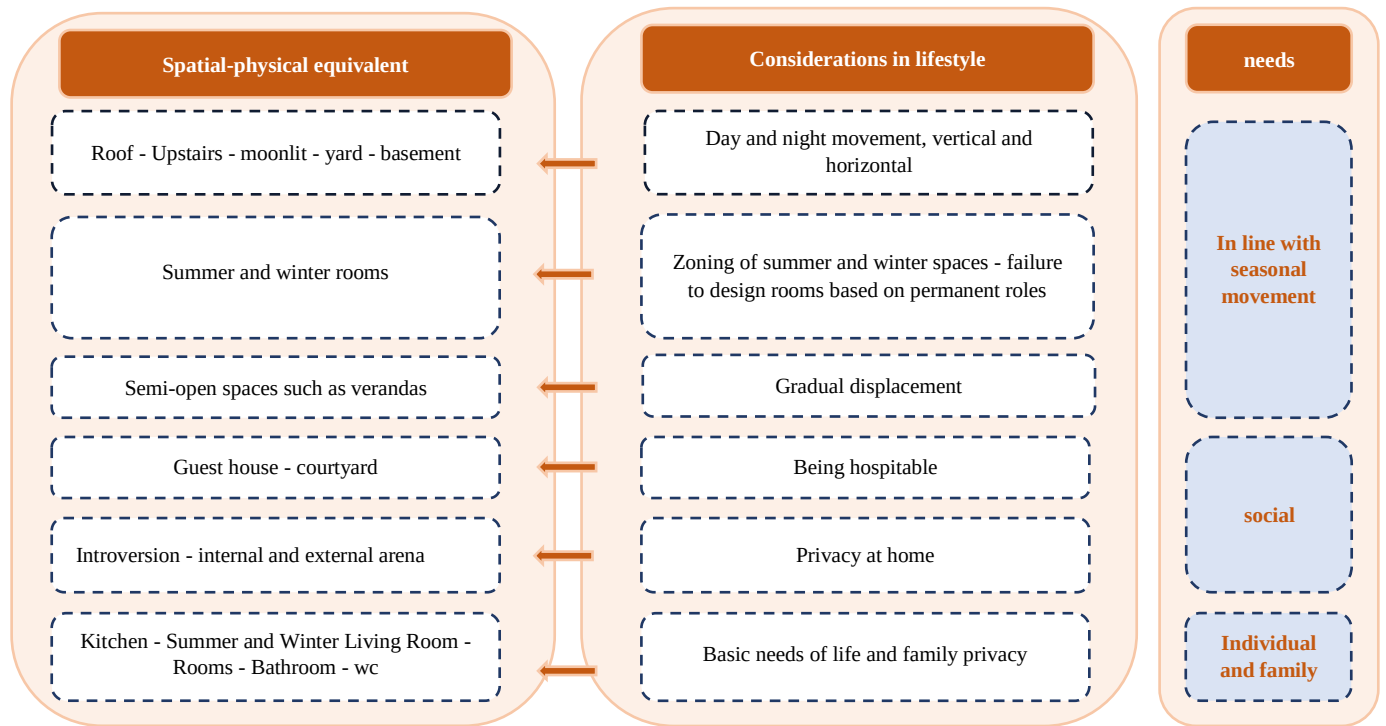


Figure 6. Physical-spatial equivalence of the house on seasonal movement

Based on the analyses presented, the characteristics of health-promoting residential spaces,

considering the lifestyle of contemporary humans, are presented in the following table.

Table 4: Characteristics of health-care housing spaces

Physician/Architect	Health features	microspace	
Ibn Sina Jorjani Savji, Balkhi Shahri Tankaboni Rahimi Mehr	1- Not having many trees 2- Not planting trees such as figs and walnuts 3- Having plants compatible with the water and a pond or stream to increase humidity 4- Predominance of green color to bring joy and blue and earthy for peace and balance of temperament 5- Presence of pleasing sounds	yard	open spaces
Jorjani Savji	1- Can be used in hot seasons and has psychological security by using a suitable fence. 2- Has a suitable coating for thermal and humidity control (in terms of insulation, double-skin or reducing the surface in contact with light).	roof	
Ibn Sina Jorjani Balkhi Shahri Gilani Silversmith Razi	1- Being spacious 2- High ceilings for easy air flow and lighting 3- Installing air inlets from below and outlets from above 4- Adjusting the living space and physical stillness of the person by creating a warm mood 5- Creating a joyful landscape in front of the awake and sedentary person with physical privacy and security 6- Adjusting the state of physical stillness	living room	
Ibn Sina Deylami Shahri Seyfian Mahmoudi De Video Hosseini	1- 80 cubic meters of air for one person 2- A moderate location in the four air qualities and in darkness and light 3- Located on the upper floors of the building 4- Away from the noise and smell of the kitchen and the sink 5- Has physical privacy and security 6- Adjusts the physical state of the sleeping person by creating a cold-tempered atmosphere	Bedroom	closed spaces
Ibn Sina	1- Being exposed to light 2- Having ventilation 3- Using a cold or temperate solution to adjust the hot temperature of the environment	kitchen	

Physician/Architect	Health features	microspace	
Ibn Sina Rahimi Mehr Kermani	1- Not being located in the middle of the building and being located in the corners and sides of the building 2- Having a spatial hierarchy and a grid 3- Having the possibility of ventilation 4- Having a private opening to the east 5- Bright coating color and pattern to restore the forces of the spirit 6- Building a solid foundation and insulation and filling the corners of the spaces to prevent the accumulation of pollution and water penetration 7- High ceilings and building on the ground, creating a sitting space in the dressing room	bathroom	
Savji Balkhi Gilani Razi	1- Having a water basin 2- Being windproof and having air flow 3- Spatial stratification from the outer layer to the depth for different hours of the day	cellar	
Savji Balkhi Shahri	1- High sky 2- Location in the summer part 3- Facing a beautiful landscape for refreshment 4- Having protection	Ivan	covered
Ibn Sina	1- Intermediate quality of light and air between open and closed spaces to prevent sudden changes in the state of body and soul.	Meandar	
Ibn Sina	1- Has a height, width, and depth that is proportionate to the human's physical abilities and proportions. 2- Possibility of using a cold-tempered structure due to the warm nature of the human's state of motion.	Staircase (vertical)	Passage spaces
Ibn Sina Silversmith	1- The width of the corridor is appropriate to the human body proportions. 2- The use of axis alignment for movement organization. 3- The possibility of using a cold-tempered material due to the warm nature of human movement.	Corridor (horizontal)	

The overall analyses in this section, together with the examination of historical houses in the hot and dry climate of Iran, indicate that the spatial organization of traditional houses in this region developed through a hierarchical system of climatic design consistent with the climatic prescriptions of physicians. Most houses in this climate correspond to the adapted dual-aspect pattern of seasonal displacement recognized in both traditional medicine and traditional architecture. In these houses, the combination of horizontal and vertical spatial layers forms an interwoven network that creates a variety of spaces with different heights, including open, semi-covered, and enclosed areas. These spaces accommodate various private and public activities associated with the traditional

way of life. Such spatial arrangements correspond closely with the pattern of seasonal movement within the house and with the climatically oriented lifestyle emphasized in traditional medicine.

The practice of seasonal relocation within the house depended on three factors: time, place, and direction of movement. This principle influenced the spatial organization of many houses and was implemented in several forms, including single-aspect and dual-aspect movements, seasonal, daily and nightly shifts, as well as horizontal and vertical relocation. These movements occurred across four main elevation levels: the roof, upper rooms, ground-level spaces, and the basement.

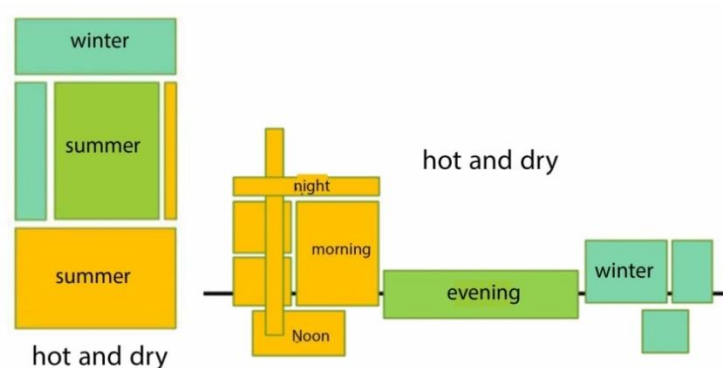
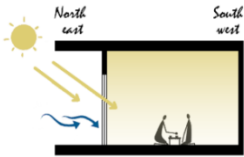
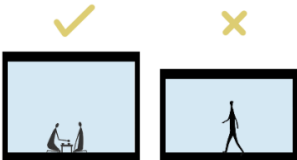
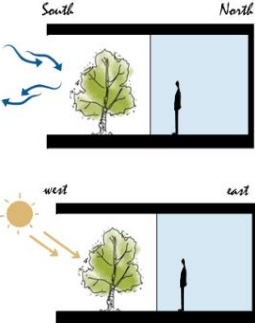
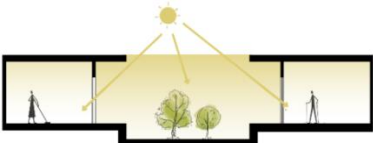
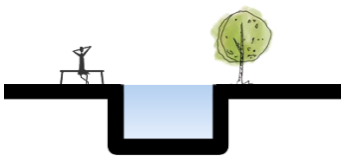
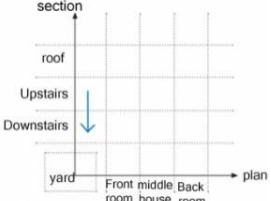
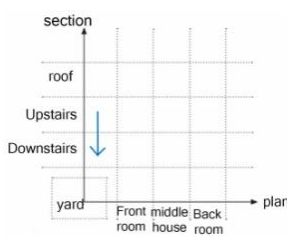
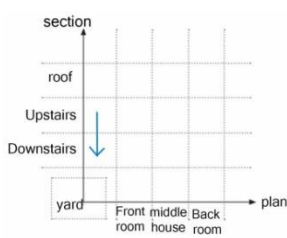
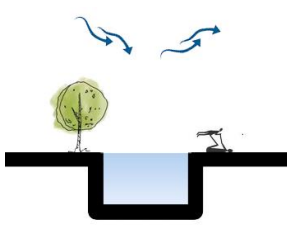
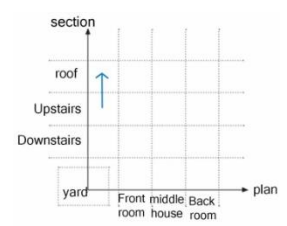
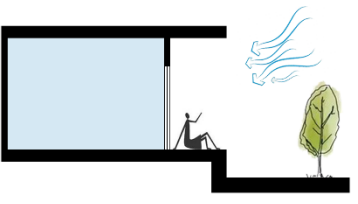


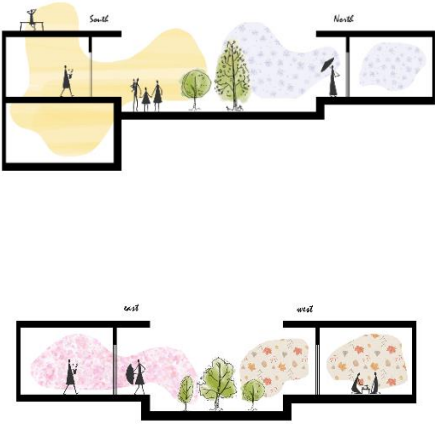
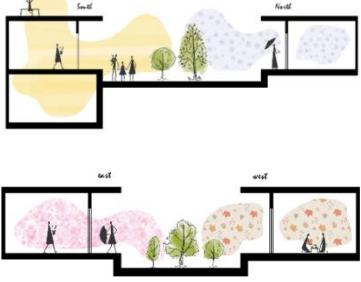
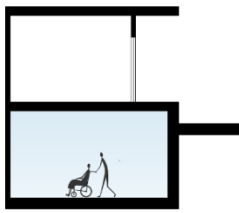
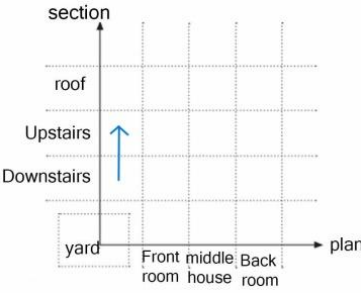
Figure 7. Extracted and adapted pattern of seasonal indoor movement in houses in hot and dry climates.²⁶

In the following, based on the discussions and analyses presented, the derived criteria for seasonal shift are presented in the form of Table 5.

Table 5. Seasonal and physical displacement criteria.

Physical result	scientist	direction	in what place	at what time	approach
	Ibn sina, Jorjani, Adams, Razi, Kamal al-Din Tiflisi	horizontal	Dwellings with doors opening to the north and east	General advice at all times of the day and night	A preventive health-centered approach and maintaining temperament balance
-	Theoretica l, Magian	vertical	Clean, clear and bright air		
-	Theoretica l, Magian	horizontal - vertical	A place away from vapors, fumes, and foreign particles, and air that does not mix with sea vapors, gullies, and ditches.		
	Nazari, Jorjani	vertical	High-rise housing with high ceilings		
	Kamaludd in Tiflisi, Abu Sahl al-Masih, Adams	horizontal	Covering of houses from the west and south		
	Jorjani, Ibn Sina	horizontal	A home where the sun's rays reach every part of the house.		
	Ibn Sina	horizontal	Near clean, flowing waters	in hot weather	
	Razi	vertical	To the pits and basements		

Physical result	scientist	direction	in what place	at what time	approach
	Razi	horizontal - vertical	To humid, well-ventilated places and underground places	in dry weather	
	Abu Zaid Balkhi	vertical	Sit on high thrones.	When the heat and cold reached their peak	
	Abu Zaid Balkhi	horizontal	South porch, exposed to the south wind (sitting area)	winter noon	
	Abu Zaid Balkhi	vertical	Basements, pits, cellars (air intake through openings at the top of the place, sitting on the bed)	Summer noon (neither before nor after)	
	Jorjani, Razi, Taheri	horizontal - vertical	Sleeping on a summer day in a windy place with a cool scent, running water, a pond, and cold flowering trees exposed to the north wind.	summer day	
	Jurjani	vertical	Access and use of the roof	summer night	
-	Hamze Nejad	horizontal	Using the east and north winds	at sunset	
-	Hamze Nejad	horizontal	Use of the West	in the morning	
	Abu Zaid Balkhi	vertical	A seating area away from the ground level, exposed to view and overlooking the sky.	At all times of the day and night	

Physical result	scientist	direction	in what place	at what time	approach
	Abu Zaid Balkhi	horizontal	Summer house (windbreak, thick walls and prevent cold loss, large space, high ceiling, having sufficient lighting and light, exposed to the north wind) Winter house (covered from wind and air currents, thick walls and prevent cold penetration, large space, high ceiling, having sufficient lighting and light, heating with fuel and delivering uniform heat to all parts of the house, exposed to the south wind) Spring and autumn (does not require adjustment of cold and heat, protection from autumn cold - sitting and sleeping place directly exposed to the morning breeze, east wind of dawn and sunlight) Turning the residence away from the west wind of the day.	Two areas of residence: summer and winter	A preventive health-centered approach and maintaining temperament balance (Four Seasons)
	Abu Zayd Balkhi , Masih ibn hakam, Boghrat	horizontal	Summer house (cold and dry, north wind, bile lysis) Spring house (cold and wet, west wind, phlegm lysis) Autumn house (warm and wet, east wind, saba lysis) Winter house (warm and dry, south wind, phlegm lysis)	Four residential areas in the four directions, exposed to the appropriate wind flow for each season	
-	Razi	horizontal	Getting into cool, dry air	Patients with lung ulcers	Treatment and climate therapy
-	Razi	horizontal	Entering cool, humid air	those with fever	
	Razi	horizontal	To cold, humid weather - to cool basements and villas with ponds, trees, and flowers.	Acute patients	
-	Razi, Jorjani	horizontal	To a city opposed to the mixture of that disease	Prolongation of the disease	
	Abu Sahl the Christian, Abu Zayd, Ibn Sina	horizontal - vertical	From town to town, from city to city, from neighborhood to neighborhood, from house to house. From the city to the outskirts, from the basement to the attic. From an unhealthy environment to a healthy environment, to a house that is the opposite of the disease mix, to a temperate house, to a seasonal house.	at the time of illness	
	Ibn sina	horizontal - vertical	Going from below the house to above the house and from the south porch to the north porch	during illness	

Conclusion

The relationship between human beings and the world (environment), based on the structural and conceptual similarity between the part (microcosm) and the whole (macrocosm) in natural sciences, constitutes the principal theoretical foundation of classical medicine. This holistic perspective carries important theoretical and practical implications for maintaining the balance of human temperament and health in relation to the ever-changing nature of the environment. Within this framework, the primary objective of traditional medicine—sustained human health—is considered entirely dependent on maintaining the balance of temperament through both innate and acquired adaptation of lifestyle to climatic changes.

According to this view, the world (nature), of which human nature is a part, functions as the independent variable, while human habitation and residential environments are the dependent variables. In contrast, within modern thought this relationship is reversed: the creation of stable conditions for human comfort becomes the basis for altering both nature and the built environment. With human comfort as the central focus, nature and the built environment are expected to adapt to human lifestyle and needs.

The climatic knowledge of physicians corresponds closely with the three principal components of the climatic perspective—human beings, shelter, and the natural environment. Like other architectural perspectives, this approach defines how architecture should be perceived by its users, presenting buildings as climatic shelters whose design must be evaluated in relation to environmental conditions. Furthermore, the findings of this research reveal a clear correspondence between the environmental health recommendations of physicians and the architectural tradition of seasonal spatial relocation within houses. Evidence of this alignment can be found in physicians' emphasis on understanding climatic elements and their natural characteristics, given their significant influence on both human health and the living environment, as well as in their articulation of health standards related to climatic and environmental factors.

Overall, the results of this study suggest that the scientific foundations underlying architectural works extend beyond the accumulated practical experience and trial-and-error of architects or the commonly held beliefs of the public. Examination of classical medical texts indicates that air, in addition to being the most essential factor for human health, was also regarded as the most important climatic factor in organizing daily life and structuring residential environments.

Moreover, health preservation and climatic therapy through the strategy of migration also reflect the dynamic interaction between humans and climatic conditions in order to maintain or restore temperamental balance. In other words, in classical medicine, changes in lifestyle and place of residence—migration—which lead to changes in air quality and consequently in human temperament, played a fundamental role in determining the overall orientation of buildings and the organization of residential environments.

Highlights

What Is Already Known?

Regarding the topic of moderation and the concept of health, which is defined by doctors as moderation in the four human temperaments, humans, in order to maintain their health and moderation of temperament, as the temperament of the nature around them is changing, depend on harmony and a healthy lifestyle that allows for change and moderation with the climatic changes of the nature of their place of residence. In this regard, research conducted in the field of housing climate measures has mainly addressed issues such as finding the appropriate location of the city and place of residence for climatic comfort and different types of housing in different climates of Iran.

What Does This Study Add?

Housing, as a place of comfort for people and a place where they spend most of their time, plays a significant role in human lifestyle and health. In this study, the issue of seasonal movement patterns within the home and its impact on human health and temperament, as well as housing architecture in accordance with seasonal movement, is emphasized.

Authors Contributions

MMR and FA conceived and designed the study, conducted research, and collected and organized data. MMR, HH, and FA wrote the initial and final draft of the article and provided logistic support. All authors have critically reviewed and approved the final draft.

Conflict of interests

None.

Ethical Approval

Not applicable.

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Informed Consent

Not applicable

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Data availability

All data generated or analyzed during this study are included in this published article.

Consent for Publication

Not applicable

The extent of AI use

Not applicable

References

- 1- Taheri, Jafar. (2016 a). Climatic measures of residential environments in medicine during the Islamic period. *Journal of History of Science*. 12(16): 37-17. <https://johs.ut.ac.ir>. DOI: N/A
Taheri, Jafar. (2016 b). Baths in Islamic medical texts. *Islamic Architecture Research*. 4(10): 43-63. <https://www.sid.ir> . DOI: N/A
- 2- Elgood, Cyril Lloyd. 1977. *Medical History of Iran and the Lands of the Eastern Caliphate*. Translated by Baher Forghani. Edited by Mohammad Hossein Rouhani. Tehran: Amir Kabir. <https://worldcat.org> . DOI: N/A
- 3- Farabi, Abu Nasr Muhammad ibn Muhammad. 2003. *Abstract Seasons*. Translated by Hassan Malek Shahi. Tehran: Soroush. <https://www.noormags.ir> . DOI: N/A
- 4- Jorjani, Isma'il bin Hassan Al-Husseini. 1966. *Medical purposes in the higher sciences*. Tehran: Iranian Culture Foundation. <https://sid.ir> . DOI: N/A
- 5- Hristakieva, E. 2005. Climatotherapy in Dramatology: why how and when? *Trakia Journal of Sciences*, 3(4) : 27-3. <https://www.trakia-journal.com> . DOI: N/A
- 6- Razi, Muhammad ibn Zakaria. 1987. *Al-Mansuri in Medicine*. Explanation, research and commentary by Hazem Bakri Siddiqi. Kuwait: Institute of Arab Manuscripts; Arab Soil Organization. <https://archive.org> . DOI: N/A
- 7- Heydari, Shahin and Mehdi Ainifar. 2011. Airflow, thermal response and comfort in the black tent. *Journal of Fine Arts-Architecture and Urban Planning* 3(47): 67-63. <https://www.magiran.com> . DOI: N/A
- 8- Aghili Alavi Shirazi. Muhammad Hussein bin Muhammad Hadi. 2006. *Kholasat al-Hekmah*. Researched and edited by Ismail Nazim. Qom: Ismaili Institute. <https://www.noormags.ir> .DOI: N/A
- 9- Ibn Sina, Hussein Ibn Abdullah. 2008. *Preventing the harm of the body from the human body*. Translated by Ali Reza Abbasian. Tehran: Danesh Pajouh. <https://worldcat.org> . DOI: N/A
- 10- Abu Zayd, Ahmad bin Sahl. 1426. *Masaleh al-Abadan and al-Anfs*. Mahmoud Mesri. Cairo: Al-Arabiya Manuscripts Institute. <https://archive.org> . DOI: N/A
- 11- Thabit Ibn Qara, 1928. *Al-Dukhirah in the science of medicine*. Cairo: Al-Masryah University, Al-Amiriyya Press in Cairo. DOI: N/A
- 12- Jorjani, Isma'il bin Hassan Al-Husseini. 2014. *Archive of Khwarazmshahi*. Edited by Hossein Alinaghi. Hadinejad Fallah, under the supervision of Yousef Beg Babapour. Tehran: Safir Ardehal. <https://www.noormags.ir> . DOI: N/A
- 13- Abu Sahl Mashii, Isa bin Yahya. 2000. *Tab al-Maat fi Teb*. Sanaghostan's Haqqa and Kadam Leh Florial. Damascus: Al-Fransi Institute for Arabic Studies, Damascus. <https://worldcat.org> . DOI: N/A
- 14- Adams, Francis. 1886. *The genuine works of Hippocrates*. Vol 1. London: Sydenham Society. <https://archive.org/search?query=Hippocrates+Adams+1886> . DOI: N/A
- 15- Jorjani, Isma'il bin Hassan Al-Husseini. 2005. *Al-Mahabhat al-Ala'iyah (The Purposes of Medicine in Higher Studies)*. Edited and researched by Hassan Taj Bakhsh. Tehran: University of Tehran. <https://civilica.com> . DOI: N/A
- 16- Jorjani, Isma'il bin Hassan Al-Husseini. 2001. *Zakhireh Khwarazmshahi*. Edited and annotated by Mohammad Reza Moharri. Tehran: Academy of Medical Sciences of the Islamic Republic of Iran. <https://www.noormags.ir> . DOI: N/A
- 17- Tiflisi, Habish ibn Ibrahim. 2011. *Bayan al-Tibb: An ancient Persian medical textbook*. Edited and researched by Hossein Razavi Borqei. Tehran: Nay Publishing House. <https://noormags.ir> . DOI: N/A
- 18- Ghobadian, Vahid. 1998. *Climatic study of traditional buildings in Iran*. Tehran: Tehran University Press. <https://sid.ir> . DOI: N/A
- 19- Memarian, Gholam Hossein. 2007. *A Journey through the Theoretical Foundations of Architecture*. Tehran: Soroush Danesh. <https://sid.ir> . DOI: N/A
- 20- Pirnia, Hassan. 2006. *History of Iran before Islam (Ancient Iran)*. Narmak Publications. <https://archive.org> . DOI: N/A
- 21- Hamzehnejad, Mehdi, Maryam Rabbani. Tahereh Torabi. 2015. The role of wind in human health in Islamic medicine and its impact on the location and structure of Iranian cities, *Naqsh-e Jahan* (5) 1:57-43. <https://www.sid.ir> . DOI: N/A
- 22- Dimashqi, Masih ibn Hakam. 2009. *Al-Risalah al-Haruniyyah*. Tehran, Iran University of Medical Sciences. <https://civilica.com> . DOI: N/A
- 23- Ibn Sina, Hussein Ibn Abdullah. 1988. *The Law of Medicine, Book 1*. Translated by Abdolrahman Sharafkandi. Tehran: Soroush. <https://archive.org> . DOI: N/A
- 24- Haeri Mazandarani, Mohammad Reza. 2008. *House, Culture, Nature: A Study of the Architecture of Historical and Contemporary Houses in Order to Develop the Process and Criteria for House Design*. Tehran: Urban Planning and Architecture Study and Research Center. <https://sid.ir> . DOI: N/A
- 25- Pourdeihimi, Shahram. 2011. *Climatic Language in Sustainable Environmental Design*. Tehran: Shahid Beheshti University Press. <https://sid.ir> . DOI: N/A
- 26- Taghizadeh, Katayoun. Mollazadeh Yazdani, Maryam. 2018. The role of climate measures based on seasonal movement in traditional medicine on human health and its impact on the formation of the spatial organization of traditional Iranian residential architecture. *Iranian Architecture Studies*. DOI: N/A