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Received 2016/11/06

Accepted 2017/11/24

Persian translation of this paper entitled:

حمام‌های سنتی؛ حافظ سلامت، عامل درمان  
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## Traditional Baths; The Preservative of Health, The Factor of Cure

Vahideh Rahimi mehr\*

Heshmatollah Motedayen\*\*

Mehrzaad Mehrbani\*\*\*

### Abstract

Historical and beneficial buildings in Iran are honorable parts of Iranian architecture and also an expressive language of the rich culture dominated in Iran. One kind of these buildings are traditional baths. Baths are amongst the most beautiful, public, technical and various environments. Unfortunately, however, its social and cultural aspects have been more considered in books and articles than its hygiene –Therapy ones, and the relationship between the body of the building and human has been focused less; hence the aim of this study referring to Iranian traditional medicine texts is to discuss the relationship between elements and organs of the bath and human's health and the formation of the bath due to four elements (water, wind, earth and fire), temperaments and humors (melancholia, bile, phlegm and blood). The main purpose of the study is to analyze the influence of shape, structure and elements of traditional baths from human and the influential designing factors of these kinds of baths on human. On the base of the theory discussed in this article, designing baths has been on the foundation of traditional medicine, and the elements and organs of the bath used to be designed to influence on human's temperament and soul in order to keep his health and cure him. The research, with this theory that the hierarchy system in bath follows specific medical instructions, goes on to study this assumption expresses that architecture in traditional baths has been formed regarding to two medical branches, physical and spiritual, that beside matching with the four elements and temperaments, has been designed to make balance between human's humor and spirit, and also it shows the relationship between architects and physicians.

This study aims to examine the theory on the basis of descriptive and analytical method, and to explain the quality of architecture by considering the human hygiene and certifying that architecture is human's home and his existence survival. The result of the study focuses on this point that there is a mutual relationship between the shape, structure and elements of human and those of traditional baths that the purpose of the relationship is to create a suitable environment with human nature for your body, soul and psyche and it can be observed in studying the architecture of traditional baths and referring to the mentioned points in Iranian traditional medicine texts.

### Keywords

Traditional baths' architecture, Health, Humors, Spiritual Medicine, Iranian Traditional medicine.

\*. Ph. D. Candidate in Architecture, Department of Architecture, Faculty of art & architecture, South Tehran branch, Islamic Azad University, Tehran, Iran. Yekta.rahimi@yahoo.com

\*\* Herbal and Traditional Medicines Research Center, Kerman University of Medical Sciences, Kerman, Iran. Motedayn@ut.ac.ir

\*\*\* Herbal and Traditional Medicines Research Center, Kerman University of Medical Sciences, Kerman, Iran Department of Medical, University of Medical Sciences, Kerman, Iran. mzmehrbani@sbmu.ac.ir

## Introduction

Architecture has a broad domain and relations to many sciences which leads to its more enrichment. It seems that medicine is one of the sciences that primitive architectures have been familiar with. Moreover, remained old buildings, written works related to medical advices and medicine application in architecture confirm this fact. The writer of book *Hudud al-Alammin al-Mashrig ilal-Maghrib* (372A. H) (982A.D) having described mathematical dimensions of the two buildings in the vicinity of Fustat writes, “impressions of many sciences from medicine, astronomy, geometry, and philosophy have been carved on these Harman” (Hudud al-Alam, 1983: 176). This expression is a short introduction to consideration and viewpoint of authors and historians of works and constructions and interrelations among sciences including medicine and architectural techniques have been neglected by many of them.

One of the old constructions remained from ancient era of Iranian architecture are baths which show the old people's behavior and culture. Traditional baths have been proper places for cleaning the body, resting, balancing the body temperature, and also socializing, holding ceremonies and doing customs. Therefore baths have had a strong connection with the people culture, and show interaction of various subjects such as medicine and health so that baths have been concerned in medical texts from the point of view of therapeutic properties, and sanitary principles for constructing and maintaining.

Baths in traditional medicine are not only a place for cleaning the body, but also they are necessary for keeping ourselves healthy and for treating some diseases. This raises the position of baths in the view of the past physicians so that they consider the baths as centers of preventing and treating diseases (Hashemi, et al., 2014: 2). For example, one of ten medical advices of Theodokus – physician of Omavian Court- for being healthy was that “take a shower every other day because bathing discharges your body

from medicines” (Ibn Abi Usaybia, 2007: 335). In the past baths, space therapy, color therapy, light therapy, aroma therapy, narration therapy and so on<sup>1</sup> were accomplished. We could get these from traditional medical advices and the opinion and approach resulted in these advices.

The present article aims to describe and analyze advices of this science on the architecture of baths and the opinions resulting these advices from the point of view of medical texts. The research, with this theory that hierarchical system of baths follows special medical instruction, intends to investigate this hypothesis that architecture in traditional baths has been formed in order for two medical branches, physical and spiritual, that together with matching with four elements and temperaments, have been designed to make balance between human's humor and spirit and it shows the relationship between architects and physicians.

With this fact, the present research intends to answer these questions that “what are the Iranian traditional medical advices for designing the traditional baths?” How the baths' architecture has responded to the medical principles? How elements and structures of traditional baths have affected the human health?

The present article approach is based on historical interpretation of documented evidences that have proceeded to the subjects related to the baths' architecture in the form of medical texts. This research is necessary because following the byway conveying these interrelations to the present situation is a way to understand the complicated network of medicine and architecture interrelation. The theoretical framework of this research is based on investigating the relation of the architectural elements and structures of baths with the human health from traditional medicine's perspective. So this article tends to focus its search on different medical texts by collecting library and field data to extract the medicine advices on constructing and utilizing the baths, and find these advices confirmations in the baths' architectures. Therefore, first of all we point to the background of the study briefly to specify the library method that is

the most important way to achieve the research goal.

### Review of the literature

In recent decades, a concept of remedial architecture has been emerged (Lawson, 2002, 2010; Aripin, 2006) that some utilizes it especially for the architecture of therapeutic spaces and some generally for different environments and its effect on human health (Abdollahzade, 2015: 140). In studying the effects on environment of therapeutic spaces on health, the researchers' consensus is that proper physical environment in designing therapeutic spaces can provide somatic, mental and psychological health of patients and employees (Lawson, 2007: 72; Bilotta & Evans, 2013; Hartig & Staats, 2003; Jones, 2002: 62; CABE, 2004; Horsburgh, 1995: 735). Studying the environmental effects on health generally is on the basis of environment psychological approaches that have been recorded about the environment effect on health and remedy (Herzog, 1985; Kaplan, 1995: Heerwagen, 1990, Velarde, et al., 2007; Rose, 2012) or on the basis of regulating the objects energy in environment and its effect on human that this research has determined the four elements as a basis for explaining the energy (Kyriacou, 2011).

Therefore, the architecture of traditional baths can be searched as a component of remedial architectures because the most important philosophy of building the baths is keeping the society's health and hygiene. The religions's attention to human hygiene has been accompanied with detailed advices and rules about this matter. And some of these rules are affirmed medically (Lofti & Masjedi, 2013: 179). Allame Majlesi points to a tradition of Imam Baqer: "the best medicaments for you are wet cupping, bloodletting, drop medicament into nose, and bath" (Majlesi, 2005: 171). Baths play a role in treatment besides its role in health such that there have been remarks on bath therapeutic properties in medical books and treatise. The role of primitive baths in preventing and treating has been important such that the physicians have allocated some parts of their writings to this matter. Of course, some physicians

have not allocated just some parts of their writings to baths, but have written independent records. Of primary texts on baths are the book of "Hamam" by Qusta ibn Luqa al-Baalbakki (Abuzeyd, 2004: 44), and the book of "Fi Dukhul al-Hamam va Manafeoha va Mazerratoha" by Yuhanna ibn Masawaih (Ibn Abi-Usaybia, 2007: 475). Abu Ubaida Mamar Ibn ul-Muthanna, Abu Ishaq Ibrahim ibn al-Ishaq al-Harbi and Razi in the treatise "Fi al-Hamam va MANafeohu va Mozarreh" are the other authors have written about baths (Najm Aabaadi, 1992: 164-166). In addition to writings on baths, their advantages and disadvantages, their buildings are described too since they play a role in treatment and health. The most important past texts have turn to the baths' buildings medically are 1) Avicenna The Canon of Medicine, 2) Zakhireye Khwarazmshahiby Gorgani, 3) Qabus nama by Keikavus Onsor al-Maali, 4) Dallakiye thesis by Kermani, 5) Kamel al-Sanaeh al-Tabia by Majusi Ahvazi, 6) Hezu al-Sehhe NAseri by Gilani, 7) Hefzu al-Sehhe va Siyasat al-Modon by Savuji, 8) Kholasa ail-Hekma by Aqili, 9) Mayoralty rules by Ibn Okhva, 10) Mofarrah al-Qulub by Arzani Dehlavi, 11) translation of Taqvim al-Sehhe by anonymous writer that later has been translated by Ibn Botlan into Arabic.

In the case of architecture of baths,, there are many studies on social, cultural, repair and continental aspects, but scholars have done a few researches on the relation between baths' architecture and anatomy, and those who have written on this subject have provided a description of past medical texts. Of researches have been done on this topic we can refer to these cases: Karimiyan Sardashti proceeds to describe the baths' architecture from the point of view of traditional medicine in an article of "Baths rule in Avicenna the Canon"<sup>2</sup> (2005) and in a book of "Baths Bibliography"<sup>3</sup> (2002). Lotfi and Majlesi in a part of book "Baths dictionary"<sup>4</sup> (2014) point to the close relation between baths and medicine, and briefly describe some medical and hygienic points of baths in a part, and proceed more to medicine and hygiene matters done in baths. Razavi Barghaei, in

the article “Baths architecture in primitive medicine texts and the introduction of Dallakiyye treatise” in the magazine of Golestan-e-Honar (2009), describes baths as intersection of architecture and traditional medicine on the basis of medical advices of Hakim Kermani in Dallakiyye treatise. In the article “analysis of medical principles; hidden dimension of Iranian baths’ architecture” in the international congress of new horizons in architecture and Municipal Engineering (2014). Having mentioned the history and generalities of baths” architecture in Iran, Hashemi , et al., study the baths in medical texts and the medicine instructions in baths’ architecture in the view of three primitive physicians. He believes that the results of medical principles research are implied in the architecture of Iranian baths and basically consider a medical role for them. Torabi and Mirlu in the article “The effects of traditional medicine basics on designing the architecture of Iranian traditional public baths” in the first international congress of clean earth, space and energy (2015), by studying the classical elements and temperament survey of Iranian traditional medicine express the mood of the architectural spaces of Iranian baths in the case study of Amir Ahmad baths in Kashan and conclude that traditional baths have rules and laws have been built on the basis of classical tempers and therefore they have been utilized for preventing and treating the diseases<sup>5</sup>. Investigation of the background shows that what have been written about this discussion has been is more the description of baths’ architectures that is extracted from one or more physician viewpoints individually<sup>6</sup>; All of them have noticed the somatic medicine and the property of the four - elements space conformity of baths architecture with temperaments and components. Other effective factors on hygiene and treatment in somatic medicine branch and baths conformity with the other natural affairs such as spirits and tempers

have not been investigated by the researchers. Also, since the previous researches underestimated the traditional medicine and confined its basics to two natural affairs of temper and component, it has not been specified that how the natural elements affect the individuals. Thus, there is a need to much more organized researches on the basis of more traditional physicians’ opinions and analysis of the advices reasons. The present research is one of them.

### Principles and basics of Iranian traditional medicine

Iranian traditional medicine is a knowledge school interlarded with Greek wisdom and has been tested with experience during years (Naseri, et al., 2013: 1). This school has two parts of theoretical and practical and two inseparable branches of somatic medicine and mental medicine (Razi, 1996: 22). In practical medicine or sapience science, the questions related to different treatment methods and all necessary subjects for treatment are discussed, and in theoretical branch , the four causes (agent, matter, form, purpose) (efficient cause, material cause, formal cause, final cause) and human health and disease constitute the topic of traditional medicine. Thus efficient causes are the most important principles in hygiene and are introduced as six principles: 1) air, 2) movement and inertia, 3) sleep and awakening, 4) edibles and drinkables, 5) body purgation and maintaining the necessary substances, 6) sensual moods. The most effective is the air, then sensual moods (mental and psychic states ) (Gorgani, 2014: 460-462). The other causes are natural cases include three materials, formal and final causes. These natural affairs include seven parts of elements<sup>7</sup>, temperament<sup>8</sup>, humors<sup>9</sup>, organs, spirits<sup>10</sup>, faculties<sup>11</sup> and actions (Diagram 1). Proper understandings of these matters are valuable in producing drugs and treating diseases and also in nutrition and hygiene



Diagram1. Seven components of natural sciences (The seven natural factors). Source: authors.



(Mirabzade Ardakani et al., 2010: 315).

### **Hygienic and remedial dimensions of traditional baths' buildings**

The main part of human life quality is affected by city and its surrounding architecture, and one cannot ignore the role of architecture and Urban Engineering in enhancing the sensual and psychological health of citizenship. A human has different physiological, mental and sensual needs. He is social and needs interaction with his fellowmen. A designer should pay attention to all these needs (Tahbaz, 2013: 31).

In the past, the collection of that era science was named wisdom (Hekmat), and those who have been master of those sciences have been known as sage (Hakim). Each technique specialist was aware sufficiently of that era sciences, and educated the people with a perfect worldview (Naseri, 2013: 19). Thus, Iranian architectures were aware of wisdom science and utilized these sciences in designing the construction<sup>12</sup>. The confirming sample of this topic in architectures is the Iranian traditional baths that the medical principles have been observed in their constructions. And baths have been places for cleaning and washing the bodies, and also of the main centers for treatment (Khodadadiyan, 1977: 63). Various factors have played roles in formation of baths' spaces and parts, that the most important of them are the temperature adjustment, moist, access path, being placed in an urban context, flowing water, and the discharging paths for sewage (Fakhar Tehrani, 2010:248). All these have been for hygiene and treatment, and have been recorded in medical texts.

### **Remedial spaces<sup>13</sup>: the role of the special hierarchy in moderating the temper**

Avicenna enumerates three properties for baths, including air warmth, water humidity and building (Avicenna, 2011: 237). Thus the baths building just as human body constitutes of four elements (water, air, earth and fire), mperaments (phlegm, bile, melancholia, blood), and soul (sensual, natural, organic); it means that it has been formed from

stone, water and air (Avicenna, 2007: 365-369). Physicians in the Islamic era have noticed this structure (Dameshghi, 2008: 119; Ibn Botlan, 1987: 142; Ibn Hubal, 1941: 210; Avicenna, 2007: 365-369; Kermani, 2008:1-2; Gilani, 2014: 146-147)<sup>14</sup>.

The baths' architecture includes entrance, disrobing room, porch, hot bath, and cold bath etc. (Shams, 2008: 65). Medical texts have advised the step-by-step entry to and exit different parts of the baths and the observation of the special hierarchy, from cold to hot and vice versa (Avicenna, 2011:376; Abuzeid, 2004: 462; Gilani, 2014: 147; Abu Sahl Masihi, 1999: 208; Arzani, 2012: 811-813). The order of rooms is for lack of sudden change in body temperature and moist when entering and exiting and for moderating the individuals' tempers<sup>15</sup>, such that it has been advised that everyone should be stay more in one bath for moderating his/her temper (Gilani, 2014: 146). On the basis of the special hierarchy we express the properties of four rooms of baths as follows (Table 1):

#### **Baths entrance**

One of the hygienic principles in traditional baths is construction of a labyrinthine corridor between the vestibule and baths entrance (Fig. 1); (Pirniya, 2007: 198). This principle is of the medical advices for preventing the air and dust entering and controlling the temperature for gradual adjusting the body temperature with the environment (Kermani, 2008: 4) since when the air and body temperatures change suddenly, one is contaminated by many diseases, thus architectures have utilized porches that not only have prevented cold air entering, but also dust entering and wasting the environment warmth simultaneously.

#### **First room: Disrobing room**

At first, after passing the entrance porch we enter the disrobing room (Fig. 2), and in fact by disrobing and doing some related affairs, the phase of accustoming with the baths has been started<sup>16</sup>. This part has platforms for the individuals being prepared and

taking rest to return to moderate and natural mood (Avicenna, 2011: 338). The disrobing room has a dry and cold temper and equals to autumn and black

bile in body (Razavi Barghaei, 2008: 66). Therefore, this space is more appropriate for individuals with warm and moist to moderate their temper.

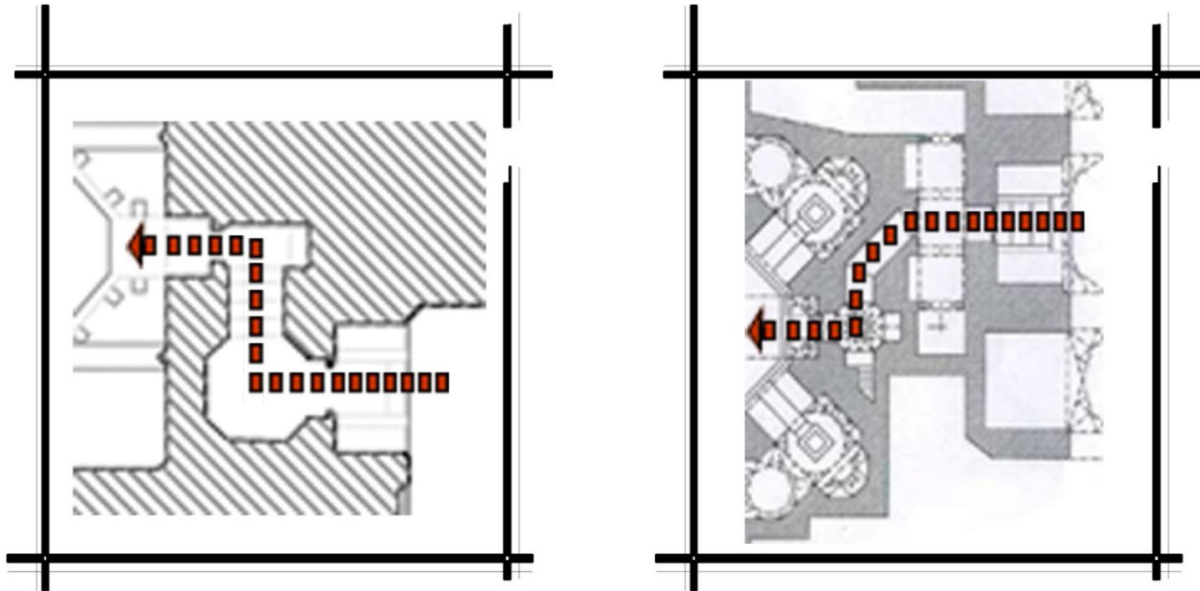


Fig. 1. Entrance porch of Ganj Ali Khan baths, Kerman (right). entrance porch of Ibrahim Khan baths, Kerman (left). Source: authors.

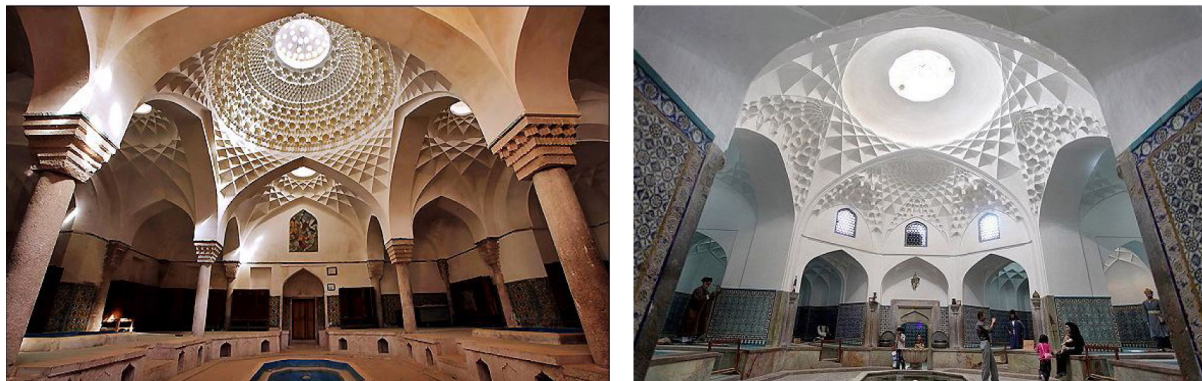


Fig. 2. Disrobing room of Ganjali Khan baths in Kerman (right). Source: the authors. Disrobing room of Ibrahim Khan baths in Kerman (left). Source: Mehr News Agency.

Second room: Chale howz (Pool with cold water)  
Regarding to body becoming cold and warm gradually, the disrobing room space and hot chamber have been linked by labyrinthine corridor and a short roof, by the name of Miandar (porch) (Fig. 3). Next to khazine there was cold water reservoir that not only provided the bath water, but also is used as a place for water playing (Mahjur, 2003: 63), this section was named Chale howz.

About this part of the baths, Gilani writes:” the second room is cold and wet, and although it is warm too, soon it returns to its natural mood, cold and wet” (Gilani, 2011: 146), that equals to winter and phlegm temper. Some authors have called it the first hot chamber that is warmer than the first room but colder than the second or third rooms (Razavi Barghaei, 2008: 66). Logically, warm tempers have used this space that has been utilized for treating biliary diseases and hypertension (Fig. 3).

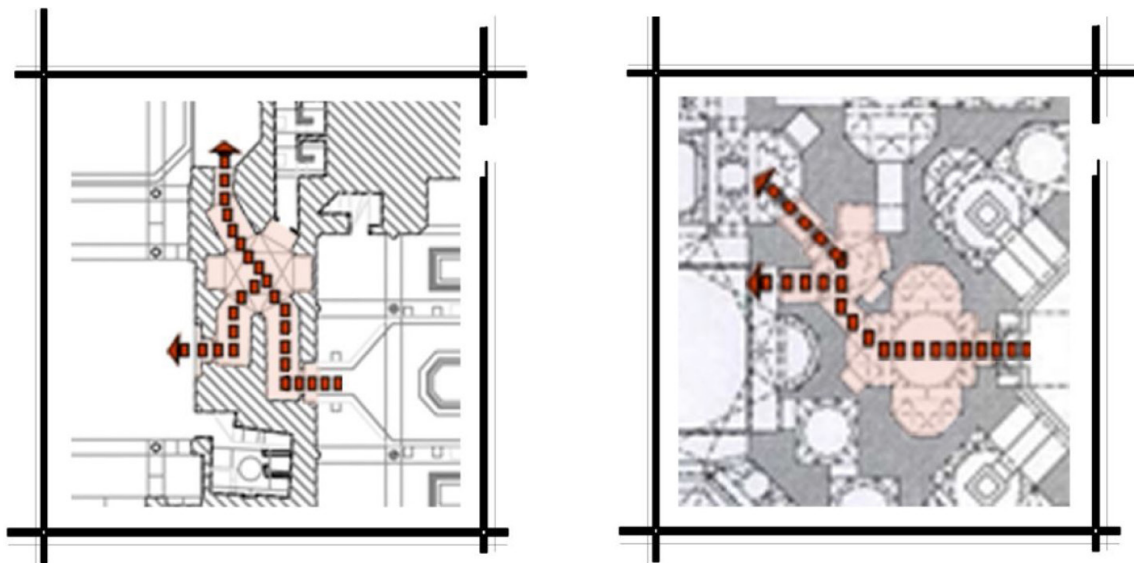


Fig. 3. Porch of Ganjali Khan baths in Kerman(right). Porch of Ibrahim Khan baths in Kerman(left). Source: authors.

### Third room: the first hot chamber, bath

Third room is warm and moist. Its warmth is more than the second room, and its humidity is due to water (Gilani, 2011: 121). Third room equals to spring and blood temper. Some have called it “second hot chamber”. Third room was the main room of baths for bathing and cleaning the body (Razavi Barghaei, 2008: 66). In the perfect baths, there were three Khazinehs, one for warm water, one for cold water and one for tepid water in the middle (Pirniya, 2007: 199). Kermani writes about these bathes: a bath should have different Khazinehs, each warmer than the other, such that everyone with different temper could bath with proper water. Warmer water is suitable for phlegmatic persons, and colder water is proper for choleric persons, tepid water is suitable for sanguine and melancholic persons. In winter, the warmer bathes are better and in summer, the milder is good (Kermani, 2008: 6-7).

### Fourth room: hot chamber

The fourth room equals to summer and bile in body (Razavi Barghaei, 2008:66). This space is the warmest part of baths and is warm and dry (Gilani, 2011: 147; Savuji, 2012: 53). The inside

air accompanying with unnatural humidity play an important role in reducing the humidity of the high-moist bodies.

### The role of ventilation in health

One of the important topics of traditional medicine is the environment that includes our surrounding environment and air which our lives depend on. Physicians following Hippocrates and Galenus consider the air as the first and most important element for hygiene (Avicenna, 2011: 187; Ahvazi, 2008: 6; Gorgani, 1998: 79). Physicians characterize the construction and utilization of the baths building that are for the baths ventilation and pleasantness<sup>17</sup> as follows:

The building antiquity: for preventing odor emission of lime, mortar, mud and vapors<sup>18</sup> Dallakiyye treatise notes that 7 years antiquity is best (Avicenna, 2011: 237; Abu Sahl Masihi, 1999: 208; Ibn Hubal, 1941: 210; Al-Ghozvali, 1882:4; Gilani, 2014: 145; Kermani, 2008:3; Arzani, 2012:803-807; Aghili Shirazi, 2007: 868).

The space extent: it's important for preventing stink resulted from breathing and vapping in a small space (Razi, 2005: 85; Zahrawi, 2004: 1156; Kermani, 2008:5; Aghili Shirazi, 2007:



868; Avicenna, 2011: 237; Arzani, 2012: 807). High roof with outlets: for preventing the air putrefaction resulting from breathing, body grime, impurities and restroom (Abu Sahl Masihi, 1999:208; Aghili Shirazi, 2007: 868; Ibn Hubal, 1941: 210; Al-Ghozvali, 1882: 2-4; Gilani, 2014: 145; Kermani, 2008: 3) Space separation according to the possibility of contamination, for example depilatory room: for preventing the putrefaction of lime (Kermani, 2008:3). Dry ground and stone flooring: for preventing the infection permeation to it (Razi, 2005: 85; Kermani, 2008: 6). Using doors without outlet: to prevent from infection and inside baths' air exit (Kermani, 2008: 4). Regarding the water perdurability in the Chale howzs, khazine and the environment purity: for preventing from the air putrefaction resulting from contaminated vapors that cause fever and infection (Kermani, 2008:).

Air putrefaction affects all body parts and causes respiratory problems, imperceptible poisoning, and exacerbates the heart diseases resulted from poisoning (Kermani, 2008: 4). But physicians' advices in designing and utilizing the baths' spaces for preventing from air putrefaction are not only because of its effect on the body, but also due to the air direct effect on soul and spirit, so that physicians believe that the gloomy air leads to spirit panic (Gilani, 2011; 145-146). Therefore, spiritual panic increases the body black bile, causes some diseases due to this increasing<sup>19</sup>, and vitiates the perception ability and leads to the evil thoughts (Ullmann, 2004:102).

### Light and color therapy

The researches results show that light influence the individuals directly and indirectly. Its direct influence is through changing the eyesight quality and affecting visual system. It affects indirectly on feelings, temperaments and even on human body hormones (Purdeyhami, 1908: 69). Therefore, in traditional baths, windows under the vault and small roof light-wells have been installed for ventilation and lighting inside the baths' space (Ghobadian, 1998: 289-290). Usually, the baths'

ceilings were in the form of dome with glasses on the tip were named "glass house" (Jaam KHaneh). One could take the glasses and put them back for ventilation to be performed (Pirniya, 2010: 390). Traditional baths have benefited from light that has been effective in ventilation and lucidity, also, the rooms walls have been painted with some figures on them (Fakhar Tehrani, 2000: 246). This has led to the bright space and the individuals rejoice since proper color for the environment provides tranquility, and improper color leads to psychosis and unhealthy moods. For example, dark and heterogeneous spaces make people depressed and cause undesirable mental pressures (Shahcheraghi Bandarabad, 2015: 309). Medically, space darkness causes black bile in body. Kermani points to this: "it is better the baths be bright since this kind is enlivening and improves body temperature and faculties and increases the blood. On the contrary, dark baths lead to panic and dominance of black bile. It's better to whiten the bath that brings about lighting and joy" (Kermani, 2008: 6). In cosmology theory of Aristotle, the earth sphere or soil is inside the water sphere, and both are inside the air sphere, and all of them are inside the ether or fire sphere (Dadashi, 2013: 190). So light (fire) cosmologically is the first advent phase. Light is warm and dry, and the brain is cold and moist (Kiyani, 2011: 5). If it isn't so, the brain fast gets dry and stops. Light motivates energy and movement, and an environment without light causes the black bile dominance in the brain, its more coldness and its unnatural state. Thus, without light, the brain gets cold and the individual will suffer from depression, lethargy and amnesia. Thus it's obvious that there is joy in light, and panic and black bile dominance in darkness; this is the matter that physicians have pointed to in describing the architectural characteristics of baths (Gilani, 2011: 146; Kermani, 2008: 6; Razi, 2005: 85; Zahrawi, 2004: 1156). Of course, sun shining inside the baths has helped to disinfecting the space. Used colors for the paintings are important. Although these colors used for herbal, human and organic paintings are not natural, the artist

has tried to increase the attractiveness and beauty of his artistic works by combining various colors and thereby affect the individuals' souls. Al- Ghozooli quotes from Zachariah Razi who says about the colors used in the baths' paintings that:" certainly, beautiful pictures if combined of familiar colors such

as yellow, red, green and white in proportionate ratio, leads to improvement of black bile temperaments; so, soul inconvenience and spirit distress will be removed, because watching these pictures makes human soul fine, and distress will be disappeared" (Al-Ghozvali, 1882: 7).

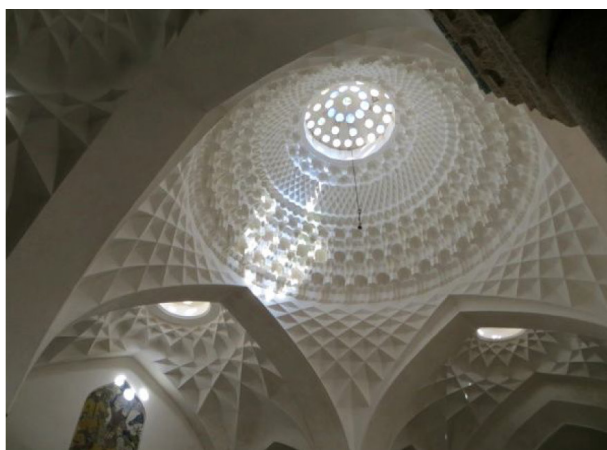


Fig. 4. the glass house of Ganjali Khan baths in Kerman (right). The glass house of Ibrahim Khan baths in Kerman (left). Source: authors.

## Hydrotherapy

Treating the diseases by water is one of the oldest remedial methods. Human has tried to do this with regard to his natural existence (Kulkarni, 2008: 47). In medical texts, fresh water has been one of the properties of the best baths, such that Kermani writes that: "the best baths are the one with fresh water. Saline water is harmful, unless for black bile-tempered persons and those suffering from polydipsia, that saline water is better for them" (Kermani, 2008: 5). For example, Avicenna advises to use fresh water for decreasing the effects of fast winds that cause cold temperament, coughing and eyesore (Avicenna, 2008: 42). However, other kinds of water have been applied for special treatments, and the type of water in some baths has been beneficial for curing some diseases. Here we point to one of Avicenna advice about this case: "waters with Natron, Sulfur, sea salt, or soil or saline materials, or waters that we have changed their nature by adding some materials to them or some things such as fodder or bayberry or matches and so

on, are effective in making the skin fine, decreasing in the additional flesh, strengthening the loose muscles, preventing these substances influence on the ulcers, and also are useful for those who affected by guinea worm" (Avicenna, 2011: 239).

Since the air of each rooms of the baths is very important, and suitable water should be utilized, cold water is not proper for hot room, and warm water is not suitable for cold room (Kermani, 2008: 5). On the mores of exiting baths, Arzani writes that after using a bath, washing the legs is essential to moderate the body temperature for exiting (Arzani, 2012: 817), for this, there is cold water in the pool of disrobing room to put legs into it after using baths. This avoids a kind of headache. Having written on the use of proper water, Gilani says that: "when we are in hot room, we should not use cold water, and when we are in cold room, we should not use hot water, because it causes body stimulation and changes the body mood and temper" (Gilani, 2011: 147). Aghili has written that using improper water is harmful and leads to shuddering and cutis anserine<sup>20</sup>

(Aghili Shirazi, 2007: 868).

In traditional baths there have been covers for all Khazinehs and pools, and water never has been warmed by the sunlight, because water warmed with sunlight causes Vitiligo. Imam Sadeq (p.b.u.h) quotes from Holy Prophet who said that: "don't perform your ablutions, ceremonial washes, and make dough with the water warmed in hot sun which causes Vitiligo". Likely, the reason of this water harmfulness is due to emerging positive free radicals (Isfahani, 1994: 134). Medicine says that the baths' water should be warmed with fire, not from hot springs (Kermani, 2008: 5), and we should pour water on the bath's ground to produce much vapor and the humidity (Avicenna, 2011: 238). Because water moistness and fire warmth cause more sweating leading to the body purification. Regarding this, the architectures have gathered two opposite elements of water and fire by designing the floor warming systems through setting cat walkways (empty space) under the baths' floor. The baths' heater has been set behind the hot chamber and has been separated from it with a netted partition. Sometimes, the heater was beneath the hot chamber and heated the floor and Chale howz water, hot water spouted through a tank or a fountain in the middle of the bath (Razavi Barghaei, 2008, 66). Avicenna has recommended that the baths' water is warmed with sesame wood and cork and lentil wood, and avoid using brushwood and dung (Avicenna, 2011: 366). This is due to their unpleasant smell. Gilani writes that: "firewood should be without unpleasant smell and smoke such that don't change the weather condition" (Gilani, 2011: 146).

### Picture therapy

Picture therapy is a set of treatments based on this theory that shapes and figures influence our lives significantly and can be treating tools for diseases and help to hygiene. Ancient Egyptians and the ancient Greeks, impressed by Egyptians, have perceived the importance of shapes and figures such that they have constructed buildings with wondrous dimensions and geometrical shapes (Stanway, 2004: 25).

This method was not unfamiliar to the Iranian architectures; they have tried to utilize different shapes depending on the constructions applications. For example, the Iranian traditional baths have had various paintings on their walls which have been proportionate with the spaces of disrobing room, hot chamber, Khazineh and pool with cold water (Fig. 5&6). Thus, the individuals who have utilized these baths profited from the picture therapy and color therapy Unconsciously.

Decorative embellishments and figures on the baths walls have been related to people lives. Founder and benefactor of baths has not been preoccupied with gaining revenue, rather he has considered body and soul health and human faculty. He has sought to use some decoration by the help of the artists, that not only played role in providing tranquility for the customers, but also were effective in thrilling them sensually (Mokhlisi, 2003: 109).

Body medicine and soul medicine are not separable (Razi, 1996: 22) and all physicians and sages believe that looking at beautiful pictures livens up our soul and removes atrabilious thoughts and scrupulosity and invigorate the brain<sup>21</sup> (Al- Ghozooli, 1882:7). Al-Ghozvali writes that: "in a good bath there should be splendid figures of lover and beloved, gardens, horse and wild organics loping. Indeed, in such figures there is a perfect and very strong reinforcement for all human natural, sensual and organic faculties" (Ibid). Therefore there have been the paintings of flowers and birds on the walls of the disrobing room to sublimate the customers' spirits. Figures of animals or warriors have been painted on the baths walls too. These figures and paintings have controlled the individuals' lethargy and drowsy mood that resulted from the hot chamber warmth, and make them more conscious. Gilani, the author of "Naseri Hifzu al-Sehhe" writes on the psychological aspects of the baths' paintings and figures: "be aware that primitive sages who were the inventors and builders, had consensus on reaching something that could compensate the shortfalls and exhaustions, having observed that although baths have many



benefits, they intrude on people mood, weaken the body strengths, and are the soul catharsis. For this, good colorful figures have been painted on the walls in three forms of natural, sensual and organic, each is proper for one of the human faculties". For organic faculty, the figures of ghosts, and armed and armiger horsemen unsheathing swords, dagger, and arming a bow with arrows; for sensual faculty, beautiful women face, and simple and black hair men while drinking and intoxicating and dancing; for natural faculty, figures of gardens and famous fruit trees such as pomegranate, peach and other fruits like them

are appropriate, and the other figures are not proper. This is the technique of painting the bath walls; however, the secret behind it is not mentioned in the medical texts" (Gilani, 2011: 154-155). Also, in "Health calendar" it has been written on these figures basics such that: "lust and rage faculties depend on the temper, and since the bath makes them weak, there are paintings of parties for stimulating the lust faculty, and paintings of battles for stimulating the rage faculty on the baths walls. But the bath has no effect on the intellect; there are no figures of sages and scholars" (Ibn Botlan Baghdadi, 1987: 159-161).



Fig. 5. brick tiles with human figures. Entrance porch to the hot chamber of Ganjali Khan bath in Kerman. Source: authors.



Fig. 6. tile frame of Rostam battle in hot chamber of Ibrahim Khan in Kerman (right). Tile frames of Jamedar (one who takes care of clothes in a public bath-house) holding an ewer in entrance of the disrobing room of Ibrahim Khan bath in Kerman (middle). Schematic tiling design of the disrobing room of Ibrahim Khan bath in Kerman (left). Source: authors.



### Regarding the remedial matters in baths

There was an especial site for wet cupping, and when blood gushed, also, there was a certain place for pouring soil on the blood. Besides wet cupping, oiling the skin and massaging have been done that have had no certain location. Mirza Ali Khan Naser al-Hokama (13th century) mentions the traditional baths as places for relieving the nerve pains, because he knows the skin as a mean linking the body nerves to the outside environment. Therefore the skin became

fine and the body relaxes by oiling and massaging (Naser al-Hokama, 1981: 127); this, depending on the individual temper, has been done in disrobing room, however, some parts of space should be considered for oiling and massaging. But there has not been a special location for doing the oiling and massaging as bloodletting, and it could be done in every space. This is not the weak point of the bath architecture, but it is its strength, because it shows the construction flexibility (Hashemi, et al., 2014: 7).

### Conclusion

The research results (Tables 2&3) show that the traditional baths have been profoundly depended on the traditional medicine for reaching to their theoretical and practical purposes, and despite of their various structures, they have been corresponding to the traditional instructions. This claim is confirmed through written evidence such as medical texts and encyclopedias and also architectural heritage. This research has approved the results of previous researches on the bath construction influenced by the medical opinions, also it has concluded that contrary to the previous researches, not only the temperaments and elements have been important in designing the baths, but also all natural affairs i.e. the four elements, temperaments, humors, organs, medical spirit, forces, and actions, have been considered. Besides somatic dimension, spiritual dimension has played a role in the bath architecture too. The traditional baths have been designed with regard to two branches of somatic medicine and spiritual medicine because considering the medicine principles and basics, the bath environmental components have caused a change of the natural affairs continuum- as material, formal and formal causes- by affecting two principles of the six traditional medicine principles i.e. air and mental states-as agent causes- and have affected the individuals' health and treatment.

Regarding two agent causes (air and mental states) in designing baths, as effective factors (baths) on health and treatment, and these two factors effects on the other classical elements can confirm the role of baths in hygiene and treatment. Since the applied plans in baths' architecture are in line with health and medical principles, in which there are solutions for moderating the temperaments, tempers, elements, and compensating the mental debility, and human faculties and actions, we could conclude that the architectures have been sages who are so familiar with the medicine science, or there has been a deep relation among the physicians and architectures.

Table 2. Some medicine advice and its confirmations in traditional baths' architecture. Source: authors.

Hygienic principles- Medicine treatment	Architecture confirmations
Special hierarchical	Constructing the disrobing room, porch, pool hole, Khazineh and hot chamber
Gradual body becoming cold and warm	Constructing the short-roof labyrinthine entrances and porches
Proper ventilation	Constructing the disrobing room and large hot high-roof chambers, stone flooring, separating the contaminated spaces from the main parts
Color and light therapy	Using glasses for lightening, bright coloring, joyful colors for decorations
Hydrotherapy	Small pool holes in the disrobing rooms and different Khazineh in perfect bathroom
Picture therapy	Using tiles and bricks in various parts of the bathrooms
Body transpiration and becoming wet	Providing simultaneous warmth and moist in bathrooms by the use of floor warming systems (cat walkways)
Doing remedial affairs such as wet cupping, phlebotomy, and massages	Allocating a space for bloodletting, and parts for remedial affairs (flexible)

Table 3. reasons of the medicine advice and its effects on human health. Source: authors.

Medical advices	Main reasons	The effects on health
In the case of old bathrooms	Proper ventilation, joy	Removing the spirit tension, and causing mental joy
Having four rooms	Keeping the temperaments and tempers moderation	Temperament moderation
The construction brightness	The bathers joy	Removing the spirit tension, and causing mental joy
The space extent	Ventilation	Mental joy
High constructions	Preventing the air contamination	Mental joy
Placing on the ground	Not losing the space warmth, and easy warming	Not changing the body state and temperament
Labyrinthine corridors	Not losing the space warmth, and preventing the dust	Not changing the body state and temperament
A location for sitting	Prepare the individual for entrance and exit	The breath becoming natural
Using proper water for each space	Moderating the temperament	Spirit excitation
Separating the spaces	Preventing the main spaces contamination	Removing the spirit tension, and causing mental joy
Using stones for flooring	Preventing water permeation and its becoming polluted	Removing the spirit tension, and causing mental joy
Using fresh water	Proper for all temperaments (for hygiene )	Temperament moderation
Constructing various baths	For all different temperaments use	Temperament moderation
Watering the ground and warming with fire	Transpiration and body purify	Temperament moderation
Using colors and figures	Sublimating the mentality and consciousness	Compensating the mental debility

## Acknowledgment

This article is taken from the first author's PHD Thesis in Arts and Architecture faculty of Islamic Azad University of south of Tehran on the title of "Explanation of the Position of Architecture in Traditional Iranian Medicine" under the supervision of Dr. Heshmatollah Motedayen and Consulting Supervisor Dr. Mehrzad mehrbani.

## Endnote

1. Narration has been a common remedial method in Islamic world hospitals (Najmabadi, 1987: 787). In traditional medicine, listening to the unique and ridiculous news, histories and narrations has caused the individuals mental joy in baths (Gilani, 2014: 146). And verbal skills have been one of the social benefits of baths (Razi, 1987: 221).
2. This article describes bath with regard to The Canon of Avicenna, and has been published in the Proceedings of the conference of Baths in Iranian culture.
3. The book of "Bath bibliography" has been compiled by Nader Karimiyan Sardashtian and printed by Anthropology Research Center by virtue of the first congress of baths in Iranian culture. The author has pointed to all researches and reports about different topics related to baths.
4. In this book there is a discussion on continental, architectural and cultural history of Iran's baths. Even different kinds of baths and the history of shore bath and sauna that have been common traditionally in Iran have been studied here.
5. This article has studied only one of the medical principles related to the traditional baths (four-rooms).
6. In the abstract and text, the writer points to this fact that this article has proceeded only to three main sources (The Canon of Avicenna, Mofarrah al-Ghulub of Arzani, and Hifzu al-Sehhe of Naseri) on this topic, and affirms that he has considered the general relation between medicine and architecture, and has recorded non-detailed matters.
7. Elements are simple objects consist of the primary components of human body and other beings, and include fire, air, water and earth (Avicenna, 2011: 10-11).
8. These elements have dual nature of warmth, coldness, moist, and dryness (Ardalan Bakhtiyar, 2011: 88). We should note that the four elements in Iranian traditional medicine and philosophy (which traditional medicine is based on) have not the modern notion. Physicians familiarity with chemical elements such as lead, sulfur, iron and so on (Avicenna, 2011: 229) and mentioning the mineral substances in the soil such as sulfur, iron and lead and so on (Gilani, 2011: 94; Savuji, 2012: 72; Gorgani, 2014: 57) are the reasons of rejection of this claim that some unaware people have compared these elements with the present elements and persist ignorantly on the physicians' unfamiliarity with the other elements; but traditional physicians believe that the periodic table also consists of the main four elements, and this is obvious from the periodic table elements quality. For example, we can say that inflammable elements consist of the elements of air and much fire; fragile elements are made up of much earth element, and flexible elements are composed of much water. Sharafkandi notes in a footnote in the translated version of The Canon that for justifying the four elements, it is better to use

the statement of Sir Arthur Edington, the astronomy professor of Cambridge University and the leader of Theory of relativity adherents, who says that "if we deal with the time, place, substance, light, color and all created objects which are so much real and distinct and separated from each other, we will reach the four elements" (Sharafkandi, 2011: 12).

Temperament is composed of the four elements. Human has innate or natural temperament inherited from parents. Each temperament has its own signs and characteristics (Kiyani, 2015: 92). Temperament is a state that is created due to mutual reaction of opposite micro-substances components. In this mutual reaction, a large part of one or more substances combine with a large portion of the opposite substance(s), interplay. And the same quality is gained from these interplaying and mutual reactions that has been named temperament (Avicenna, 2011: 12). There are two groups of tempers: 1) moderate, 2) non-moderate (Avicenna, 2011: 14). What are said on the individuals' temperament is about non-moderate temperament that is classified into 9 types: moderate, cold, warm, wet, dry, warm and wet, warm and dry, cold and wet, cold and dry that by mistake are considered the same.

9. Human blood is composed of these four tempers. If we pour the blood in a glass, it sediments and is divided into four layers; upper layer is yellowish (bile), second layer is reddish (blood), third layer colorless (phlegm) and the underneath layer is black (black bile) (Kiyani, 2015: 43).

10. This is medical spirit and is different from incorporeal spirit and links the body and spirit.

11. The faculties and actions are recognized by each other, because each faculty is the source of a kind of behavior and vice versa. Physicians mention the faculties showing the actions: spiritual faculties, natural faculties, and organic faculties. Many philosophers and all physicians especially Claudius believe that each faculty has a source that is an organ and its actions are resulted from that organ (Avicenna, 2011: 152-153).

12. Collection of these sciences includes arithmetic science, geometry, astronomy, music, medicine, zoo archaeology, and metaphysics, all of them are subsets of theoretical sapience. And practical sapience discuss interrelations among creatures includes social personal behavior, domestic management, nations management or policy (Torabi & Mirloo, 2015: 2).

13. Remedial space in a bath means both notions of remedial architecture.

14. Some physicians such as Gilani and Aghili Shirazi have pointed to baths with three rooms that means three rooms besides the disrobing room.

15. Onsor al-Maani writes that: "when going to a bath, first stay in cold room such that enjoy staying there. Then go to the middle room and stay there to benefit from there. After that, go to the warm room, and when being warm, go to the private room and wash your head" (Onsor al-Maali, 1985: 107).

16. When the individuals take off their clothes, they have greeted and spoken with each other, told jokes and settled annoyance and misunderstanding. This has given their mind peace, just as their body.

17. Gilani has mentioned four characteristics of a good bath: weather pleasantness, much light, accessible water, good woods (Gilani, 2011:146).

18. Plural of vapor.

19. A temperament that its dominance causes types of diseases including nerve illnesses such as depression and obsession, and skin diseases, varicose and so on is black bile.

20. Hair standing.

21. Al-Ghozvali has quoted this subject from Hakim Badr al-Din ibn Mozaffar Ghazi Baalbak in the book Mofarrah al-Nafs.

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