

## Investigating the Designing of Hydrotherapy Complex Based on Medical Tourism in Attracting Tourist for Economic Development: A Case of Ardebil Qanirje Nir Hydrotherapy

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**Abstract:** In spite of the increasing advancements of technology and industry, the evidences show that people have great enthusiasm to spend their excessive incomes in travelling. In effect, tourism as a profitable and employment industry has attracted lots of importance. Medical tourism is a branch of tourism which provides medical services beside tourism services. Regarding that hydrotherapy complex is a complete therapy, it has a superior place in medical tourism. So, promoting the design of hydrotherapy complex is the priority of medical tourism. The present study used survey and library method aiming at designing hydrotherapy complex with medical tourism. Finally, this study aims at investigating the effective factors in creating pleasant therapy environment for attracting the tourists, promoting tourism and tourist's satisfaction regarding the obtained criteria.

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**Key words:** Tourism Industry, Health Tourists, Hydrotherapy.

### Introduction:

Water has been used as a tool for therapy from long time ago. During the last 50 years, using water for therapy has developed in the forms of ice bags, hot water bag, revolving pool with special pores (Anrea Bits, 2009:6). Using water for keeping and supporting health and curing the diseases and illnesses is called hydrotherapy. In other words, it can be said that hydrotherapy is curing the diseases through correct use of water not only keeps the health but also takes the health back through purification when it is lost or disturbed (Ramazanipour, Ebrahim, 2012:1). To cure the common illnesses like headache, anxiety and drowsiness it is better to use hydrotherapy. Since activity is less in cold weather, the warmth and the minerals in hydrotherapy are used (Klarens, 2007:7-13).

On the other side, industrial life brings some requirements and creates different needs in various communities. It is the reason that different parts of the world use natural therapy methods such as hot water springs and all classes of people including wealthy and low income groups have tendency toward this tourism. Hot water springs are good places to make tourist resorts. Creating leisure complex and presenting services and facilities can change these places to first-class tourism complex due to providing both exciting and happy moments and health and relaxation services.

Regarding the current needs and changes of human communities to fun and entertainment and natural therapy with water, the complexes and infrastructures of this sector are defined. Annually millions of people use these mineral hot water springs

among which is Qinerje. So, regarding the high ability of this area to present tourism and health services and possessing natural and tourism attractions it is crucial to regulate and compile the plan and the strategy of industrial support and profitability and tourism business.

### Statement of the problem:

Using mineral water has a long history but its scientific use has fulfilled in this century after recognizing its effects (Kazem Kiani, 2008:30). Nowadays, in some countries, hydrotherapy complexes are made as medical cities curing the patients with constant overseeing of physicians (Kazem Kiani, 2008:32). Annually, millions of people use hot mineral water and it is predicted that 15% the travelers visit and use these complexes. Qanirje is one these water sources.

So, regarding the changes and needs of human communities to fun and entertainment, the need for hydrotherapy complex and infrastructure potentials in this sector is felt.

### Significance of the study:

Tourists travel to Iran for familiarizing with Iranian civilization and culture and visiting natural and ecotourism attractions, commercial and trading or therapeutic and medical goals. Regarding the indispensable importance of tourism industry and economic prosperity, proper policies have not been made to improve it. The most significant efforts of tourism industry is related to encouraging and advertising strategies which are demand-based. Having cheaper medical and therapeutic facilities and natural resources such as hot water springs in the

region, Iran has the highest ability in medical tourism but the opportunities have not been used fully.

**Purposes of the study:**

- Organizing the current status of installations, equipment, services and active regions of the area tourism through moving toward systematic, efficient and functional constructions.
- Using tourism activities as an important vector of regional development beside agricultural, industrial and service and making functional bond between tourism and other economic sectors.
- Activating potential sources of the region tourism through rebuilding and equipping it to diversify the attractions and making new motivations for demand and distribute the tourists in the region.

**Literature review:**

Taqizadeh et al (2011) in a study titled “the role of Iran in medical tourism of Islam world investigated the uses, challenges and solutions with a focus on nature therapy. They showed that developing this area of tourism has not been focused properly and consequently not a good base has been created for the establishment private complex. Finally, the purpose of the study is seeking the under-development of medical tourism and its related issues.

Heidarzadeh et al (2007) in a study titled “medical tourism in Iran and world” considered medical tourism as field providing both tourism and medical services to foreigners. Then, the most important areas of tourism in India, Singapore, Thailand and Philippine were probed. Finally Iran was identified to have a distinctive place in global medical tourism.

**Research hypotheses:**

- Tourism components have significant effect on hydrotherapy processing design.
- Tourism has direct effects on high levels of economic, social and cultural levels both from medical and natural perspectives.
- Green designing is the biggest obstacle against wasting and improvidence in medical tourism.

**Research questions:**

- Designing the aquatherapy of Qinerje aiming at promoting the region’s tourism will lead to what physical forms?
- What is the effect of Qinerje hydrotherapy in attracting tourist and improve tourism?
- What the effects of sustainable criteria in the process of hydrotherapy designing?

**Research method:**

The present study has two parts including theoretical and architectural designing. Theoretical studies and survey-descriptive method is used.

**The concept of tourism:**

Tourist became prevalent in 19th century. At that time the royal French families should travel to fulfil their education and gaining the required life experiences. They were called tourists but later it was used to refer to those who travelled to French for fun and spending their leisure time. Later on, more generally it was attribute to those who travelled only for this purpose. Then, the word entered other languages and “Tourist” was created. Tourism not only promotes the income of individuals and organizations active in this industry but also it is useful for the people who like tourism. It shouldn’t be neglected that every country, city or village has some potentials for economic boosting. So, tourism can raise economic competition like a business (Karimi, Mahboobfar, 51). The written and the remained works help us to understand the history, geography and life conditions of the past ruling systems. They also help to perceive that sometimes tourism activities have influenced the fate different communities and even world (Dilamani, 2008:57). So, tourism is one of the most important cultural interaction and transaction; also, it includes a set of service and industries caused by the travelers’ business (Omidian, 2009:19).

Nowadays, the countries who has invested in the market for increasing their GNI have also found tourism market as the most important market with financial circulation, employment and high profit. Increase of international growth and the interest to tourism destinations on the other hand have created more prefix and suffix for “tourism” such as “war tourism”, “religious tourism”, “urban tourism”, “village tourism”, “sport tourism”, “health tourism”, “medical tourism”, “eco-tourism” and “events tourism” (Haqiqi et al, 2009:25). Tourism is an economic activity that due to its special identity and characteristics provides appropriate opportunities for entering into the course of international trade without consideration of the countries’ under-development level (Haqiqi et al, 2009:25). Moreover, most of policy makers and planners of development consider tourism as the main component of sustainable development (Sarai & Moayedifar, 2010:1).

**Medical tourism:**

Natural tourism includes using natural healing sources such as mineral water springs. First it was publicized by travel agents and the media observing the societies having quick growth in tourists especially tourists the patients seeking treatment. This business is being developed providing significant benefits to those countries who have used their potential in this area (Heidarzadeh et al, 2007:4). Medical tourism is not merely presenting medical services but it is based on medical treatment beside rest and relief can facilitate the convalescence and treatment (Heidarzadeh et al, 2007:4).

Medical tourism for health and recovering the ability is one of the most important aims of tourism. It is a kind of tourism which is done to keep, improve and regaining the mental and physical health in a time interval more than 24 hours and less than a year. WHO defines tourism in a special way to refer to “using the services which lead to health improvement and increase and vitalize their spirit through mineral water, good weather or medical interference. This is done outside the person’s residence area for more than 24 hours (Haqiqi Kafash, 2009:25).

The concept of medical tourism is not new dating back to thousands of years ago when some Greek pilgrims travel to a holy place known as “Epidoria” in Saronik golf to seek health from Aslepios, the goddess of health. There were experienced persons in this place which treat the sick people. British people also travel to shrines for two thousand years to baptize in the holy water. In the 18th century the European aristocrats especially the German ones travel to Nile bank for relief and health (Heidarzadeh, 2007:5).

#### **Medical tourism in world:**

A combination of factors has caused increasing tendency of people to medical trips among which are high cost of life in industrial countries, facilitation of international travels, rectification and improvement of technology level and medical standards in most of the world’s countries (Heidarzadeh, 2007:6).

A reason of attraction to medical trip is its easiness in relation to other countries. In some countries where public health services are common lots of time is spent to answer citizens’ needs and the patients must await a long time; for example, thigh joint graft which lasts more than one year in England or Canada. In Thailand, Singapore, Philippine or Bangalore in India a patient can be treated after one day (Heidarzadeh, 2007:6).

Among the reasons of medical tourism is lower costs of treatment and searching for an experienced and specialized physician, high quality of medical services, the safety and shorter waiting time for treatment (Heidarzadeh, 2007:6).

#### **Medical tourism in Iran:**

Iran’s tourism attraction are undeniable based on physical-historical documents and the comments of the visitors. Beside historical and civilization attractions, spiritual and cultural and the indices of Iranian-Islamic identity which are peculiar in the world, existence of some natural gifts as rich heritage are spectacular epitomes of eco-tourism and natural heritage can face every tourist with wonderful change (Eftekhari & Bishami, 2010:5).

Medical tourism can have a special position in Iran. Obviously the collaboration of cultural heritage organization and the related organizations can facilitate the process (Heidarzadeh, 2007:6). The

movement of medical tourism committee in cultural heritage organization in attracting foreigner patients through widespread advertisement and investing in research and training, building health centers, special checkup clinics, establishing equipped traditional and modern centers in hot water springs and appropriate information dissemination are among the ways to reduce Iranian patients’ travel to other countries for medical treatment and preventing high rates of exchange egress. The studies show that annually about \$1000000 is spend by patients traveling abroad for treatment (Heidarzadeh, 2007:5).

#### **Hydrotherapy:**

Using mineral and therapeutic water has a long history but recognition of therapeutic effects dates back to recent years. Hydrotherapy has effects on human body or some of its parts which increase when used directly. Mineral and therapeutic water exist in different parts of the world with different effects related to themselves (Kazem Kiani, 2008:30). It should be noted that in spite of water composition, there are other effective factors such as region’s weather, height and the treatment method. Generally, a treatment cycle should not be considered as fun or entertainment but the patient should go through the treatment cycle according to a regular cycle (Kazem Kiani, 2008:31). Nowadays, in some countries mineral water spring stations are considered as a medical city treating the patients based on constant supervision of the physicians. These centers are available in French, Italy, Germany, Northern Europe and Russia and the people use them appropriately (Kazem Kiani, 2008:31). Hydrotherapy is a finite body purification which cleans all the organs and cells and egresses the disease causes. In hydrotherapy the disease is treated naturally using pure water. It is a set of works where water is used for improving the mental or physical conditions, backing health and beauty and treating the pains and illnesses. The treatment is done internally and externally (Kazem Kiani, 2008:287).

#### **General introduction of the plan:**

Ardebil province is located in the cold area and west-north of Iran plateau covers 179525 square kilometers which is one percent of Iran. Ardebil town has four weather types including hot Mediterranean, temperate Mediterranean, cold mountainous and temperate mountainous weather. This town is one Iran’s cold regions having cold weather in more than eight months annually. Nir city and qinerje is located at eastern 48.5 longitude and northern 38.5 latitude covering more than 400 hectares and 35 kilometers away form Ardebil. The mean height from sea level is 1650 meters. The main part of the area is located in a bowl-like alley in Malaya in Sabalan mountains hillsides. The slopes in the eastern and western steams return like an east-west valley. The difference between

the highest and the lowest point is 60 meters and the highest sunny time is 320 hours a month. Ayan Shaher has the maximum of 93% and the minimum of 32% moisture and the lowest temperate in winter is -6.30 (Aqasi, Sahabi, 2004:128).

Finally, this plan is established in a land on 80000 square meters located in 38th kilometer of ARbil road to Tabriz between Barjelo and Qinerje hot water spring by Watter Affair Organization.

**Tourism demand capabilities in the area:**

However this area is not visited by outsiders, beautiful natural landscapes and the springs of Balkhali river having different fish specially red-spot salmon, propinquity and accessibility to Arbil-Ardebil road passing in the middle are among the demand markets.

**Local demand:**

Local demands are the most significant customers of mineral hot water referring for medical purposes.

**National purposes:**

National demands for Arbil tourism can be classified in different levels:

- The number of migrants from this area to Tehran is very high in socio-cultural levels. There is a great bond between them and their homeland returning them to Ardebial and Arbil annually.

- Bonding of Ardebil area and national tourism areas, nice weather and easy access facilities in summer has made this area a new destination for Tehran residents rather than cultural destinations such as Isfahan and Shiraz lacking a nice climate and mineral water resources.

**Persian Gulf and Arab countries demand:**

This is a very significant demand for this area. The hot and dry weather of these countries and their high income level made them high purchase power customers which can have very determining role for Ardebil area.

**Benefits and advantages:**

The following are among the important reasons for the establishment of this complex:

- Five million passengers annually visit this area and Ardebil
- 35-45% of the passengers enter the city from Nir road
- Qanirje Nir area is located in Ardebil to Northwest of Iran high-way.
- Nice weather of the area
- The area's popularity because of hydrotherapy infrastructures
- Qanirje Nir hot water brand.

**Context of the plan:**

Table 1. Land form

	Class	Features	Quality
Land form	1	The region should have different landforms and beautiful landscapes	Very good
	2	the diversity of landform is not high in the region and has view to some extent	mid
	3	uniform and plain region with views	very low
Forest wideness	1	Hectare	good

Source: the researcher

If the area has a proper landform, then another classification can be done in planning entertainment zones based on the slopes.

Table 2. Slope percent

	Class	Features	Quality
Slope percent	1	• If the slope is 5-10%.	• very good
	2	• If the slope is 10-15%.	• Good
	3	• If the slope is 15-20%.	• Mid
	4	• If the slope is more than 20%.	• very low

Source: the researcher



Table 3. Drinking water

Drinking water	Cases	Class	Extensive recreation	Quality
		1	• 40-150 liters for each day	• Good
		2	• 12-40 liters fro each day	• Mid
		3	• Less than 5 liters for a person in each day	• not good
	Extensive recreation	1	• 12 liter for a person in each day	
		2	• 5 liters for a person	
		3	• in a day	
			• Less than 5 liters for a person in a day	

Source: the researcher

**The reasons for choosing Qanirje Nir project site:**

Ardebil province specially this area has many tourist attractions like hot and cold mineral springs and various physical and chemical features. A small number of these springs are being used due to geographical location, people’s familiarity and their facilities. In other hot water springs, the installations and facilities are very old. Regarding the bounty of the mineral water in Qanirje and their medical and preventive characteristics, raising this area as a global

district, equalizing the facilities in this area with national and international standards are among the reasons for choosing Qanirje Nir project site.

**Introducing and analyzing the site:**

**Site location:**

The site has been located in Ardebil Province and Nir town in Ardebil-Tabriz road, close to Vali-e-Asr village at the very beginning of Sain Col at the highway road downside. The area of the site is more than 80000 square meter.



Picture 1. Aerial image of Qanirje Nir hydrotherapy complex location. Google Earth.

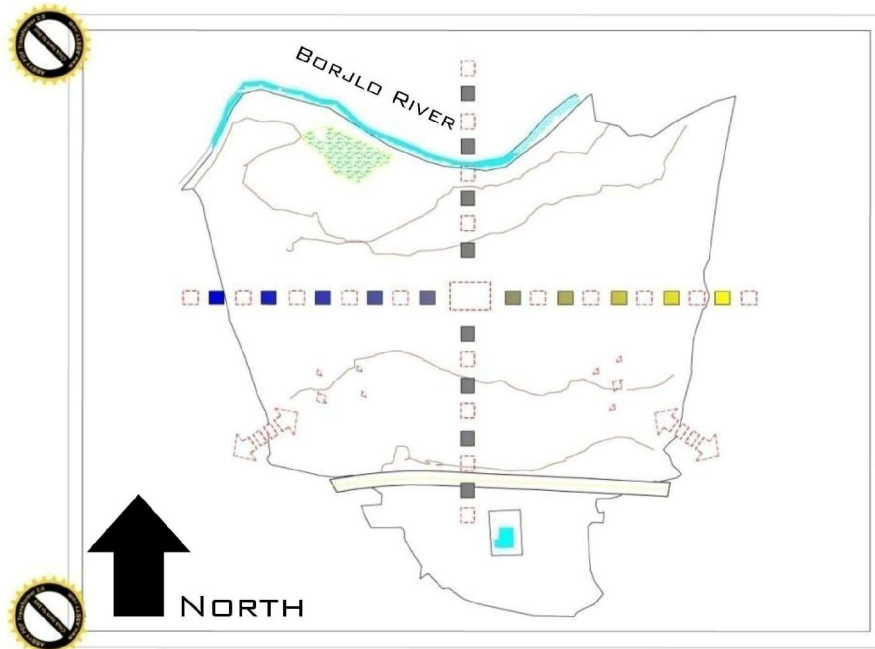
**Site accessibility:**

There are two main accessibility to the site.

- From east to Ardebil

- From west to Tabriz

**Borjlo River**



Picture 2. Accessibilities. Source: the researcher

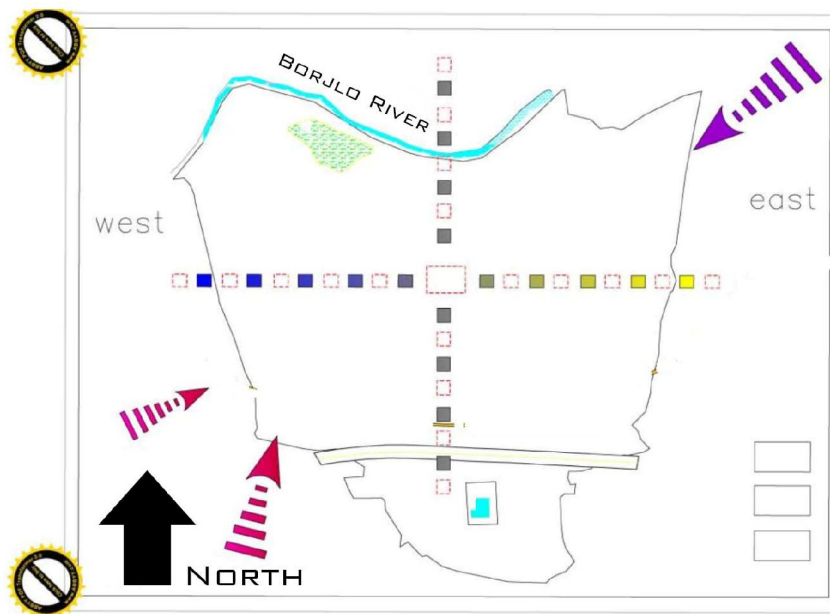
**Site's winds:**

Ardebil is affected by numerous winds in different seasons flowing from different directions (2008, 142).

The winds influencing Qanirje Nir town are dividend in two groups:

North East wind which is called Mah Yeli in local language and it is very cold. In warm seasons, it causes rain and in cold seasons it causes snow. The winds blow all over the year.

South West wind which is called Aq Yeli and cause evaporation and drying of the ground. It stimulate rainy clouds and cause raining.

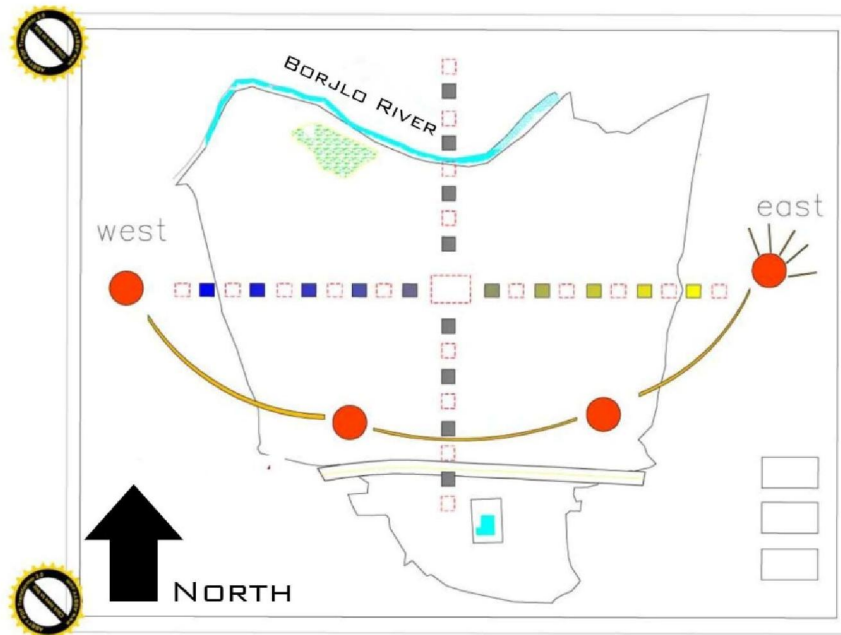


Picture 3. The direction of disturbing and Caspian winds

**Shining:**

The highest rate shining on the ground from natural sources.

Regarding shining graphs in the region, the building in 60 ° north is the best position for the maximum of sun shining in different seasons for the four direction of the building (Qobadian, 2008:75).

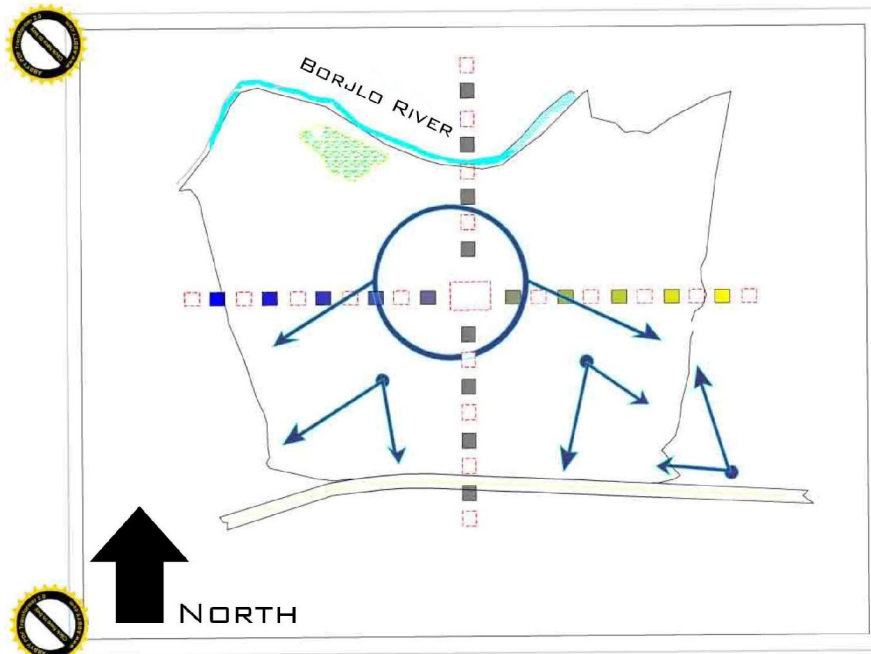


Picture 4. Sun movement direction and its shining to the site. Source: the researcher

**View and perspective**

Since the site is located beside the main road in a relatively steep slope with a little distance from the mountain in a pristine natural perspective, it is noticed

for view and perspective. Since the mountain and hills have circled this area, its landscape is faced with limitation to some extent.



Picture 5. The main and the secondary view of the site

**Designing procedure:**

Regarding the subject of the project having different functions and space, the site was analyzed first from slope and topography, view and perspective, sun light and climatic slope in site and accessibility perspectives.

In the first stage, interesting results of the analysis were found which considered as site's energies. The results which have been explained briefly in the report lead to the intellectual basics of the form creation.

The second stage was the analysis of the needed space function and the relationship between the project's elements drawn transversely and schematic plans which present a visualization and embodiment of the real space. In this stage, according to the results of the first stage, spotting in the site was completed and the positions were measured in relation to each other and other aspects.

In the third stage, to create proper accessibility to the form, using the idea of the project and interference of the existing forces in the site, a generality came in the virtual space as the base of the architecture idea. After the formation of the volume concept, other forces such as functions, communications, the structure and the facet of the project in the volume.

**Conclusion:**

Regarding the high medical science and capacity of Iran in presenting medical services and the existing potential in this area, the experience in curing harsh diseases and Iran's natural and tourism attractions, it is necessary to compile and regulate the plan and the backing strategy and profitability of tourism industry in collaboration between cultural heritage organization and ministry of health and medical education and Iran's institute of trade development to introduce Iran as a capable scientific pole especially medical sciences. So, medical tourism should be considered as a systematic approach and the management should take this approach to tourism. Establishing medical centers and specialized committees in attracting health tourism with widespread advertisement, departure of Muslim patients to European countries for medical purposes can be stopped. Finally, regarding natural therapy, educational and medical capacities, Iran can be a main center of medical tourism in the region and among Islamic countries.

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