

## ORIGINAL RESEARCH

### Investigation of Hot Spring Awareness Between Doctors Faculty of Medicine in Düzce University

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#### Abstract

**Objective:** Hot spring medicine and hot spring tourism has been increasingly popular in the world and our country for the last 50 years. People in our country have been in search of natural and traditional methods to relieve their discomfort and contribute to their health during their holidays as in the rest of the world. Awareness and knowledge levels of physicians on this subject is important to suggest hot springs individually within the scope of other traditional and complementary medicine and develop internal tourism (health tourism) movements. The aim of this study is the determination of the opinions, knowledge and awareness levels of the physicians working on Düzce University Faculty of Medicine.

**Material-Method:** The data were collected by survey technique. In the research, a questionnaire form was distributed to all physicians working in the faculty and 72 physicians agreed to fill out the questionnaire. 69 of them were found suitable for evaluation. The survey includes a total of 22 statements apart from demographic questions. The expressions used are five-point Likert scale (I agree-I don't agree). The statements are generally aimed at determining the awareness of physicians about hot spring treatments.

**Results:** Approximately one-third of the physicians have never been to a hot spring before; almost all of them declared that they do not recommend hot spring treatment to any of their patients. Almost all of them wish to be educated on this subject and consciously recommend and prescribe their patients. It is understood that the majority of physicians lack information about hot spring medicine, use, and awareness.

**Conclusion:** Almost all physicians have the demand to have information on this subject. There is consensus on increasing scientific research on the subject and ensuring its integration in modern medicine.

**Keywords:** Hot Spring, Physician, Awareness, Survey

#### INTRODUCTION

Hot spring has been used in the field of health as a traditional and complementary medicine practice for thousands of years all over the world. As it is accepted in our country, the concept of "Health Tourism" is generally divided into two main areas: Medical Tourism and Hot Spring Tourism<sup>1</sup>.

In hot spring tourism, hot spring visits are observed both for protecting and maintaining the health of local tourists in the country and for seeking support for the treatment of their diseases and it is also observed that many people from abroad try to protect and treat their health within natural ways in different cultures<sup>2</sup>. Accordingly, countries have increased their investment and R&D (Research and

development) activities. Health and wellness tourism grows 12% annually with changing global demand<sup>3</sup>. Because it has been determined that tourists visiting the countries for health purposes spend money 4 times more than people who visit for sightseeing<sup>4</sup>. Yurdakul and Özgencil (2017), according to the results of the econometric modeling forecasts they developed, an increase in the number of visitors to our country for "health and medical reasons (health tourism)" increased the income from health tourism by 962 dollars on average; the contribution of other alternative tourism types to income is lower<sup>5</sup>. Getting more shares in this type of tourism depends on providing



world-class and quality health services where the number of participants and the income from these countries are increasing<sup>6</sup>.

The person who gets the service, regardless of the nation, is a person of all ages and genders who are trying to retain or regain his health. In this regard, this field, which is in direct contact with people and directly related to human health, brings the need for well-equipped healthcare professionals with sufficient knowledge and experience. The subject of the hot spring is not included in the education curriculum of both our allied health personnel and general practitioners or specialists in our country. This is the most important obstacle for our hot spring tourism with 2023 target of 500.000 qualified beds<sup>7</sup>.

As a definition or active employee of a certified “hot spring cure physician” is not available in our country instead of existing almost worldwide. This situation stands out as a deficiency in the health examinations of people who try to use the hot springs with traditional methods. The same situation exists in businesses that have to diversify products and earn money in the hot spring sector. Besides, tour operators who will bring tourists to our country for health purposes should also have sufficient knowledge and equipment. It arises as a result of not having hotels and hot springs without certified staff in their catalogs.

It is inevitable to have a certain standard of institutions, buildings and employees to be entrusted in this sector whose basic service target is human. One of the primary reasons for the development of hot spring tourism is that these standards are not known and implemented in our country, which is evident on a world scale. Unfortunately, those who manage the hot spring hotel and facility, the staff serving the facility, those who manage the city or those who serve in the city do not know enough about hot spring medicine and hot spring tourism<sup>8</sup>.

The utilization of hot springs is a ritual known in our geography for thousands of years. The first hospital in the world Asklepion for treatment patients with water in Bergama is also the place where two famous physicians such as Hippocrates

and Galen grow up and treat patients. The Turkish Baths, which have become a world brand after the Roman baths commonly used in Anatolia, also used hot spring water. It is known that people seeking cleaning and healing have used these baths for centuries<sup>9</sup>.

Our hot springs with such an ancient history and tradition are not recommended to patients because they are not known, used, and their mechanism of use and methods of use are not known by general practitioners and specialists working in those regions. This situation results from the fact that our people either cannot benefit from local hot springs or use empirically<sup>10</sup>.

Since the operators of the hot springs do not have sufficient knowledge and equipment, in-service training is not possible and a satisfactory answer cannot be given to the questions from the customer. Moreover, there are no application centers or sources for business owners and managers.

Based on all these facts, it is aimed to make a survey among our physicians serving at all levels in the field of hot spring medicine and hot spring tourism and to evaluate the knowledge and awareness of our physicians on the subject.

## MATERIALS AND METHODS

In the study, field research methods and survey techniques were used. The target population of the study is composed of physicians from the Faculty of Medicine at Düzce University. The reason for choosing physicians of this faculty is the existence of hot springs in the related city. There are two hot spring sources known in Düzce. Efteni Hot spring, located on the edge of Lake Efteni, has been inactive for several years. However, Derdin hot spring is active and it is still possible for our people too. It is used as a mineral spring cure.

The convenience sampling method was used for data collection. The surveys were applied to physicians in 2019 March. It has been featured to fill in the distributed surveys by 72 willing physicians. At the time of the study 256 physicians work at the faculty. Three surveys due to missing markings have not been evaluated. 69 questionnaires were included in the assessment.

Afterward, it is planned to repeat this survey in ten districts with the contributions of the Ministry of

Health, General Directorate of Public Health. The applied questionnaire is as follows (Table).

**Table 1.** Knowledge scale of physicians for hot springs, treatments, and developments

	Absolutely disagree	Disagree	Agree/Disagree	Agree	Absolutely agree
I have information about thermo-mineral water	①	②	③	④	⑤
I have information about the effect mechanisms of the hot spring water	①	②	③	④	⑤
I am knowledgeable about the benefits of the thermo-mineral water	①	②	③	④	⑤
I know the contraindications to the use of the thermo-mineral water cure	①	②	③	④	⑤
I have information about the duration of the classic thermo-mineral water cure	①	②	③	④	⑤
I am knowledgeable about regular hot springs use and healthy living connection	①	②	③	④	⑤
I have information about the hot springs in this region	①	②	③	④	⑤
I have information of hot springs legislation	①	②	③	④	⑤
I know the procedure of patient referral to the hot springs	①	②	③	④	⑤
I have information about thermo-mineral water treatment cures (Balneotherapy, thalassotherapy etc.)	①	②	③	④	⑤
I have information about emergencies (thermal crisis etc.) that may occur during the thermo-mineral water treatment	①	②	③	④	⑤
I follow the developments about thermo-mineral water treatment	①	②	③	④	⑤
Combination of traditional and complementary medicine (T&CM) and thermo-mineral water cures is more effective than T&CM treatment alone.	①	②	③	④	⑤
The use of hot springs for therapeutic purposes increases patient satisfaction.	①	②	③	④	⑤
Thermo-mineral water treatment can help fight diseases.	①	②	③	④	⑤
The use of the hot springs provides health and wellness.	①	②	③	④	⑤
Doctors should be more trained in the use of hot springs.	①	②	③	④	⑤
I support the inclusion of T&CM methods such as hot spring use in the medical curriculum.	①	②	③	④	⑤
Integrating the thermo-mineral water treatment into the health system improves patient care.	①	②	③	④	⑤
I support the use of thermo-mineral water cures like medicine treatment.	①	②	③	④	⑤
Research should be conducted on the effectiveness and safety of thermo-mineral water cures.	①	②	③	④	⑤
It is beneficial for patients to build health centers where thermal and other traditional and complementary medicine methods are used together.	①	②	③	④	⑤

The first scale used in the study was created by the researcher to measure how well the physicians know about the hot spring and related treatment methods and developments in this area (Table 1). The scale used in the second part was created by making use of the scales made before, which measure the perspectives of physicians on traditional medicine and treatment approaches. The scale is based on the perspectives of physicians on using hot springs as a complementary and traditional treatment method (Table 7).

### Statistical analysis

SPSS 22.0 (Statistical Package for the Social Sciences - Statistical Program for the Social Sciences) was used to analyze the survey data

obtained from a total of 69 participants. As a result of the evaluation, the descriptive data and attitudes of the participants were determined by frequency analysis.

### RESULTS

The survey was prepared to be applied to 256 physicians working at Düzce University Faculty of Medicine. Although it was aimed to reach all physicians, 69 physicians were included in the study.

The expressions other than demographic questions were arranged at a certain interval from “Absolutely Agree” to “Absolutely Disagree” by structuring on a 5-point Likert scale. The data obtained in the study were collected through face

to face questionnaires. The questionnaires were distributed to 72 physicians and 69 of them were evaluated as usable.

The results obtained from the study are shown in the frequency distribution table. The distribution of participants by gender is shown in Table 2. Accordingly, 33 of the participants are women and 35 are men, and 1 person left the gender part blank. Most of the participants are have university and postgraduate degrees in terms of their educational status, and the distribution of these two groups is

**Table 2.** Descriptive information of the participants

	Number	Percentage
Male	35	50.70
Female	33	47.80
Null	1	1.40
Totally	69	100.00

very close to each other. The distribution of physicians by level of speciality is demonstrated in Table 3. The majority of the participants are between the ages of 30-39 and it is seen that they are in the first five years of working life. In the questionnaire, the physicians were asked whether they had been to the hot spring before. The results are given in Table 4. More than half of them have been to the hot spring before. The percentage of physicians who recommend the hot spring to their patients is shown in Table 5.

**Table 3.** Distribution of physicians by level of speciality

	Number	Percentage
Practitioner	2	2.90
Asisstant	41	59.40
Specialist	24	34.80
Intern	1	1.40
Null	1	1.40
Totally	69	100.00

**Table 4.** Have you been to the hot spring before?

	Number	Percentage
Null	2	2.90
Yes	41	59.40
No	26	37.70
Totally	69	100.00

**Table 5.** Did you recommend thermo-mineral water treatment to your patients?

	Number	Percentage
Null	2	2.90
Yes	10	14.50
No	57	82.60
Totally	69	100.00

Note: While evaluating the tables below, for example, the answer given to "I have information about thermo-mineral water" was found to be 2,3971. This 1 absolutely disagree, 5 strongly agree; it does not correspond to disagree with or disagree. In other words, they do not think that they

have information about thermo-mineral waters. Other expressions can also be interpreted in this way. The hot spring existence and awareness survey of physicians is given in Table 6. Also the perspective of physicians to the hot springs is shown in Table 7.



**Table 6.** Current state of physicians' to existence and awareness of hot springs (average values)

	Number	Average	Standart Deviation
I have information about thermo-mineral water	68	2.3971	1.16080
I have information about the effect mechanisms of hot spring waters	69	2.3623	1.18782
I am knowledgeable about the benefits of the thermo-mineral water	68	2.6471	1.26685
I know the contraindications to the use of the thermo-mineral water cure	68	2.7941	1.29935
I have information about the duration of the classic thermo-mineral water cure	69	2.2029	1.24357
I am knowledgeable about regular hot spring use and healthy living connection	69	2.3768	1.17770
I have information about the hot springs in this region	68	2.3824	1.25816
I have knowledge of the hot spring legislation	69	1.7246	1.02733
I know the procedure of patient referral to the hot springs	69	1.6957	.98972
I have information about thermo-mineral water treatment cures (balneotherapy, thalassotherapy etc.).	69	1.8986	1.20226
I have information about emergencies (thermal crisis etc.) that may occur during the thermo-mineral water treatment	69	2.2464	1.29939
I follow the developments about thermo-mineral water treatment	69	2.0290	1.13722

**Table 7.** Perspective of physicians on the therapeutic properties of hot springs

	Number	Average	Standart Deviation
The method in which traditional medicine and hot spring types are used is superior to traditional medicine treatment.	68	2.6324	1.07765
The use of hot springs for therapeutic purposes increases patient satisfaction	69	3.4203	1.11679
Thermo-mineral water treatment can help fight diseases	69	3.2899	.97168
Hot springs use provides health and wellness	69	3.3913	.98842
Doctors should be more trained in the use of hot springs	69	3.7971	1.09248
I support the inclusion of CAM methods such as the use of hot springs in the Medical curriculum	69	3.1594	1.09307
Integrating the thermo-mineral water treatment into the health system improves patient care	69	3.3623	.90702
I support the use of thermo-mineral water cures like medicine treatment	69	3.1884	1.11508
Research should be conducted on the effectiveness and safety of thermo-mineral water cures.	69	3.9130	1.10798
It is beneficial for the patients to build health centers where the hot spring and traditional medicine methods are used together.	69	3.5942	1.08897

## DISCUSSION

To be able to respond to the increasing health tourism movement in the world and our country and to obtain high income from this type of tourism, a quality health service should be provided. In our country, there is a shortage of qualified, experienced, and certified personnel who are trained in the field of hot spring medicine and hot spring tourism both in public institutions and in the private sector. According to the results of this study and the applied questionnaire, our physicians have a lack of knowledge and awareness on this issue.

The first reason that causes this situation is the absence of hot spring medicine and tourism lessons in the curriculum of medical schools and vocational high school of health. The profession of “cure physician” working in the hot springs of countries where this type of tourism has developed does not exist in our country. In our country, the hot spring is perceived as a place where only physical therapy

is carried out, other specialties in the indication of water and preventive medicine are ignored, and the problems are dragged into deadlock by the imposition of certain professional organizations. Besides, physiotherapists who want to be brought to the hot springs for management do not receive hot spring medicine training during their specialization.

## CONCLUSION

When this situation is examined in detail, considering our solution suggestions listed below may be beneficial for the development of our country's hot spring medicine and tourism movements:

- 1) The inventory of the hot springs should be urgently prepared with an existing facility and capacity based classification.
- 2) A certification training should be organized for physicians who will work in the hot springs, and



the cure physician should be defined professionally.

3) Hot spring medicine and one-month hot spring rotation should be added to the specialist training curricula of all specialist physicians.

4) With the participation of our universities working directly with hot springs, “ The Platform of Universities with Hot Spring” should be established and our universities should be supported in training educated personnel, R&D and standardization.

5) All primary care physicians working in the public sector and physicians working in public hospitals should be subjected to in-vocational training related to the hot springs within their duty areas and encouraged healthy and sick

individuals to benefit from the hot springs in the population they are responsible for.

6) Scientific researches on hot springs and hot spring tourism should be encouraged and the scientific contributions of our universities should be increased.

The studies to be carried out in line with the given suggestions will contribute to increase the knowledge and experience of physicians and healthcare professionals. It will be ensured that the potential of our country's hot spring and health tourism in this field will have its deserved in the international market with the employment of trained labor force needed in the hot spring facilities.

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